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PHARMACISTS AS CASE FINDERS

An Editorial

HEALTH officials throughout the nation, at Federal, state and local levels, are realizing more and more the great potential of the neighborhood pharmacy as a health education and "case-finding" center.

What does it profit mankind if great medical discoveries applicable to diagnosis or treatment of major illnesses are made but do not become available to all who may be afflicted.

Early diagnosis is the secret of a reduced death rate in such diseases as cancer and in many cardiac ailments. Case finding is a potent technique for spreading the benefits of better health care.

What is more logical from a public health standpoint than to use the pharmacies of the nation, through whose portals pass upward of four billion persons annually, to disseminate health information and to assist in locating those who need medical attention.

Obviously, we do not advocate that pharmacists should become diagnosticians. We do, however, advocate, and advocate most strongly, that persons revealing symptoms of illness when contacting pharmacists should be diplomatically but firmly directed to physicians, clinics or other competent agencies for the necessary attention.

Upward of 12,000 pharmacies have already enlisted in a concerted program of action in the field of cancer case-finding. If you are not one of these you may still join the ever-increasing group which is engaged in this highly commendable project. Full details can be obtained by addressing a card to the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Ave., N. W., Washington 7, D. C.

Briefly, the program consists of displaying in the prescription laboratory bi-monthly statements intended to inform pharmacists on certain phases of cancer control and case-finding. This is supplemented by the display of a counter card in the pharmacy directed to the public. A new phase of this educational program is supplied every two months.

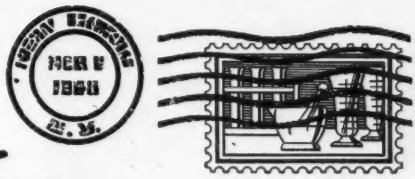
If the pharmacist is to give reliable information to the public, he must be well informed himself. Recognizing this, the Public Relations Committee of the AMERICAN PHARMACEUTICAL ASSOCIATION has arranged to publish articles on cancer regularly in THIS JOURNAL and other pharmaceutical publications. The content of these articles is designed to keep the pharmacist continuously up to date.

To help pharmacists pass such information on to the public, attractive counter cards are issued periodically. They contain in simple terms the important facts about cancer which everyone needs to know.

Following the inauguration of the health information program early this past summer, two complete mailings of educational material have been made to the 12,000 participating pharmacists. These mailings were devoted to the subjects of laryngeal cancer and gastric cancer, while a third mailing scheduled for November will deal with oral cancer.

All the materials used in connection with the program have been made available free of charge to all pharmacists of the nation, whether or not they are members of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Each month, more and more pharmacists have signified their interest in this program and have asked to be placed on the mailing list for the receipt of future mailings. All other pharmacists reading this message are cordially invited to join the continuing year-round program now. It is not only a public service but also a builder of prestige for pharmacy.



Letters:

Pharmacy in China

Sirs:

Among your readers there are quite a number of our friends who have been following our program of endeavors to develop modern pharmaceutical education and practice in China. We graduated the fourteenth class in pharmacy from this University in June, 1948. There were twenty-eight this year to receive their degrees in pharmacy on completion of the four-year course of studies.

Because of the considerable demand for pharmaceutical service throughout China, most of these new graduates had little difficulty in securing responsible positions even before their graduation. As pharmacy is one of the largest and popular departments at present in the University, the prospects for continued development of this profession in China, both from the standpoint of education and practice, appear bright. This is the only University in a population of over two hundred million giving pharmaceutical instruction.

West China Union University — E. N. MEUSER
Chengtu, Szechwan, China

Desires to Correspond

Sirs:

. . . I am glad to be able to read news and articles about American pharmacy. Here we are still rather separated from foreign states and do not always receive true information about present conditions.

If you have students who would be interested in corresponding with a German collegian, please give them my address. (It is my opinion that the young generation of the civilized peoples must try to know and understand each other in order to hinder dark elements from making hate and war among the nations again.) If you will find such a person I should be glad to hear from him. My principal interests and knowledge are with the sciences of pharmacy, music and flying. Besides, I am interested in all matters of intellectual life.

This correspondent's name and address will be supplied by the Journal to any interested reader upon request.—THE EDITOR

Blood Perfusion

Sirs:

The following additional comments concerning Russian experiments with blood perfusion, discussed in my recent letter, may be interesting to your readers. The complete story is even more detailed and interesting than the excerpt I sent you. Although the experiments in "reviving, or revivifying dead animals" have yielded no new light on death, they have yielded some interesting material on such diseases as epilepsy, spinal meningitis and various afflictions of the nervous system, both psychic and physiological. Unfortunately, we still know very little about Russian medicine, for a number of well-known reasons, chief among which are the poor manner in which the Russians publicize their own discoveries, and the near-inaccessibility of Russian publications in this country. I am studying the situation as well as I can and some day I hope to write some articles not only on the revival experiments but on other subjects of medical interest. At present, about the only thing one can say is that, as always, despite any political changes, the Russians are continuing in their fine tradition of physiological medicine, as established by Pavlov and Metchnikov.

Philadelphia, Pa. — JOSEPH BROWN

Sixty-Five Years of Service

Sirs:

The enclosed check is for '48 dues. This past year I retired from business at eighty-five years of age (graduated in the class of 1883). I am now president of the Chicago Veteran Druggists Association, and past president of the Illinois Pharmaceutical Association, Chicago Retail Druggists Association and Chicago Drug Club.

After devoting so much of my time to all these drug organizations over the years, I think I have done all that can be expected from a man of my age. I therefore plan to discontinue my active membership in the ASSOCIATION at the end of this year.

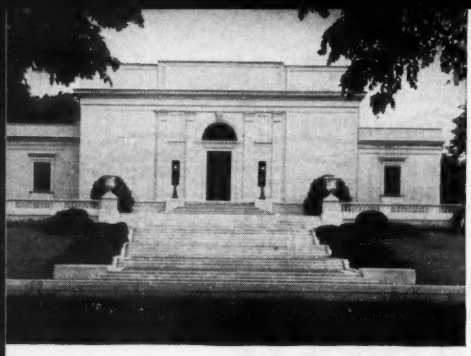
Chicago, Ill. — GEORGE V. HAERING

Our best wishes to A. Ph. A. member Haering for continued good health and an enjoyable retirement, well earned by lifelong service in pharmacy and its professional organizations.—THE EDITOR

Sirs:

Please send me an extra copy of the January issue of the PRACTICAL PHARMACY EDITION. I found the articles on pharmacy in the services and other government agencies very interesting, as did many of the other men here at this Army hospital. In fact this issue was passed around so much that it eventually may have been worn down to nothing, for it has disappeared. . .

Wilkes-Barre, Pa. — L. I. JACOBSON



STRAIGHT FROM HEADQUARTERS

by *ROBERT P. FISCHELIS,* Secretary
AMERICAN PHARMACEUTICAL ASSOCIATION

Accepted Anti-Anemia Preparations

CONSIDERABLE space in this issue has been given to the Fifth Announcement of the U. S. P. Anti-Anemia Preparations Advisory Board which includes a list of approved anti-anemia products to which unitage has been assigned between January 26, 1943, and May 1, 1948.

We have devoted pages 660 to 669, inclusive, to this presentation as a part of the ASSOCIATION'S service to the U. S. P. Revision Committee and to the pharmacists who will want to have these pages available for ready reference in their prescription laboratories.

Election Morals

MANY American citizens awoke on November 3 to find that an election which had been decided months in advance by self-appointed clairvoyants had really been decided by the majority of the voters. It is good that we occasionally have a needed lesson brought home to us by some very dramatic and effective medium such as the 1948 elections supplied.

Regardless of how one may feel about the outcome of this month's elections, every thinking American who values his right of franchise will appreciate its moral effect upon those who conduct pre-election polls and similar studies.

By what right does any individual or group of individuals invade the privacy of the polls in advance of the election and decide for the world at large that any individual has no chance of being elected to an office for which he is a candidate? The effrontery of the pollsters and columnists in publishing the results of their estimates as though they were facts, in advance of the day when the actual process of electing a president takes place is something that every red-blooded American ought to resent. One can do a piece of statistical research and express an opinion on it but such opinion should be labeled what it is and not be sold as an accomplished fact in advance of the only method by which the actual facts can be determined—and that by others.

Opinion research and statistical science have their proper place, but it is not their proper place to endeavor to influence people by drawing positive conclusions from data which must of necessity be limited in their application. Any one who does honest research publishes the facts as he finds them and leaves room for possibilities which may not be covered in the research. In medicine and pharmacy, we look upon the man who says he has found a cure for any disease, even a minor disease, as a charlatan unless he can furnish very conclusive proof of accomplishment. Even after such proof has been furnished with overwhelming evidence, the careful researcher in this field will emphasize variables and possibilities which have not been adequately covered and will take great pains to forestall over-confidence.

Business men have become accustomed to evaluating the quality of research and prognostications based upon statistical studies and they know that opinion and prognostications based on the most careful statistical studies may prove to be wrong.

Some of the poll takers have pointed out margins of error and shifts in emphasis which might occur to invalidate some of their findings. But almost without exception, they have added to their so-called scientific findings some rather definite expressions of

opinion which have been published as gospel in the reading pages of newspapers while candidates for office would have to pay space rates to say the same things.

The lesson to be gathered from the election returns this month includes the importance of a due regard for the sanctity of the ballot box, and it is to be hoped that those who run election polls in the future will label them what they are and not attempt to become spokesmen for the American people before the American people have spoken.

The publication in advance of the plans and procedures of a candidate for office, as though he had already been elected, is not so much a bad guess—or a good guess if it had been successful—but a callous disregard of publishing ethics. Not only should the faces of those who have committed these unethical journalistic practices be red, but their consciences should be troubled because they took unfair advantage of their competitors and of the people they claim to serve. This applies equally to those who prepared to publish as fact, what could at best be a good guess, and to those who lent their publications to advertise what could not possibly have been a fact at the time it was printed.

Andrew G. DuMez

ON SEPTEMBER 30, 1948, the flag on the memorial "to all pharmacists who served in the wars of our country," which adorns the grounds of the headquarters of the AMERICAN PHARMACEUTICAL ASSOCIATION in Washington, was at half mast. On that day, Andrew Grover DuMez was laid to rest in Baltimore, Md. The ASSOCIATION was thus paying a fitting tribute to a former president who had given freely of his time, energy and talents in advancing the profession of pharmacy in many ways.

Dr. DuMez died in the harness. It was typical of his brand of service that he should be continuing to give of himself until the very end, even though he had not been in good health. He had been working diligently on the preparation of standards for accreditation for colleges of pharmacy in collaboration with the director of the Pharmaceutical Survey and the members of the American Council on Pharmaceutical Education. It was an especially exacting and time-consuming task. It was fortunate that he could finish this job because he was the one individual who was familiar with the many intricate details derived from the reports of inspections of some 60 or more schools of pharmacy throughout the United States. He had been engaged in this activity since its beginning and was therefore able to evaluate the progress made by various institutions since the original standards had been promulgated.

The annual reports of the American Council on Pharmaceutical Education reflect Dean DuMez's philosophy and keen analysis in many ways. He was an individual who despised sham and bluff. He could sympathize with the administrator of a college of pharmacy who was honestly struggling to place his institution on a firm educational foundation and who confessed the shortcomings of the institution and gave substantial evidence of correcting these shortcomings. He could be equally *un*sympathetic with the type of college administrator who tries to bluff his way through and constantly complains of being discriminated against and points to shortcomings of other institutions in order to justify his own.

Dr. DuMez's services to the government of the United States, first in the Philippines and then in the U. S. Public Health Service and later as a consultant to the Manpower Commission during the last war and to the Surgeon General of the Army since the inauguration of the Medical Service Corps, gave him a background which proved invaluable as he approached the many problems he was called upon to deal with as a member of important committees and as a consultant. His proximity to Washington was taken advantage of on many occasions by the American Association of Colleges of Pharmacy and the AMERICAN PHARMACEUTICAL ASSOCIATION when it became necessary to express important points of view and findings to government agencies.

In every instance Dr. DuMez acquitted himself in a manner which earned the gratitude of those he represented, as well as the respect of those to whom he carried pharmacy's message.

These are days of important developments in pharmacy's program along many fronts. We need young men to supply the energy, enthusiasm and initiative that spark the machine with which pharmacy sets out to

(*Continued, p. 685*)

FIFTH ANNOUNCEMENT

of the U.S.P. Anti-Anemia Preparations Advisory Board

STATEMENT OF THE BOARD

Desirability of Restriction of Strength of Liver Injection U. S. P. to 10 and 15 U. S. P. Units (Injectable)

It is now over ten years since the availability of Liver Injection U. S. P., containing 10 or 15 U. S. P. units (injectable) per cc. was first announced by the Anti-anemia Preparations Advisory Board.[1] During that time it has become well established that such liver extracts, prepared by several manufacturers, are highly efficacious in causing increased blood formation and arrest of the progress of neural lesions and general clinical improvement in Addisonian pernicious anemia.[2,3,4]

These highly satisfactory results have been obtained with almost no exceptions when such preparations have been employed in amounts and at intervals such that the dosage averages 1 or more U. S. P. units (injectable) daily. Indeed, once the hematologic improvement has become well established it is usually possible—with convenience to both patient and physician—to complete the patient's recovery and to maintain it by the intramuscular injection every two weeks of as little as 1 cc. of material containing 15 U. S. P. units (injectable). In many instances it is possible to give twice as much of this concentrated preparation only half as often. Many patients apparently require even less. Nevertheless, because

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THIS announcement includes a statement by the U. S. P. Anti-anemia Board concerning the desirability of restricting Liver Injection U. S. P. to preparations containing 10 and 15 U. S. P. units (injectable) per cc., together with a discussion of the limitations of the value of Liver Injection (Crude) in pernicious anemia and the utility, in unusual instances of nutritional macrocytic anemia, of Liver Injection (Crude) and especially of Dry or Liquid Liver Extract for oral administration. The policy of allowing manufacturers to state the species of liver employed in making Liver Injection U. S. P., as an aid in avoiding sensitivity reactions, is considered. Finally, the contraindications to the use of pteroylglutamic (folic) acid in the treatment of pernicious anemia are discussed.

In addition a "Recapitulation of Advisory Board Rulings" and a "Summary of the Specifications of Anti-Anemia Preparations, U. S. P. XIII" appear on the following pages.

Under the title "Additional Accepted Anti-anemia Preparations" there are also listed the anti-anemia preparations that have been approved and assigned unitage by the Board since the Fourth Announcement on March 1, 1943.

Revisions of the pamphlet "Directions for the Submission of Data by Manufacturers," on the potency of liver and stomach preparations, and of "Applications for the Resale or Repackaging of U. S. P. Accepted Liver or Stomach Preparations," have been made on the basis of continued experience. Although a certain amount of additional information is requested concerning sources, methods and controls in manufacture, no significant changes in the principles involved in establishing the potency of anti-anemia preparations have been made. Copies will be mailed upon application to the chairman of the Board, Dr. Randolph West, College of Physicians and Surgeons, 620 West 168th St., New York 32, N. Y.

August 1, 1948 E. FULLERTON COOK, Chairman, U. S. P. Committee of Revision

the risk of recurrent anemia, or especially of permanent disability as a result of neural relapses, is so effectively and easily prevented by the administration of Liver Injection U. S. P. at the rate of 1 U. S. P. unit (injectable) a day, the Board continues to recommend this as an effective prophylactic dosage in the vast majority of patients.

However, the use of preparations of Liver Injection U. S. P. containing less than 10 or 15 U. S. P. units (injectable) per cc., though equally effective therapeutically, is not considered to be in the best interest of the patient or his physician because of the greater volume or frequency of the injections required, especially for maintenance. On the basis of these considerations the Board wishes to propose to the pharmaceutical industry the general discontinuance of Liver Injection of the lower U. S. P. unitages and will recommend for inclusion in U. S. P. XIV Liver Injection U. S. P. containing only 10 and 15 U. S. P. units (injectable) per cc.

Indications and Limitations on the Use of Liver Injection (Crude) U. S. P. with Special Reference to Macrocytic Anemias Due to Deficiency of "Wills' Factor"

In contrast to the further fractionations required for the preparation of liver injection of high U. S. P. unitage, Liver Injection (Crude) U. S. P. is prepared by stopping the process of extraction at such a point that the final product is derived directly from 70% alcohol by volume. This product, originally described in the first U. S. P. bound supplement of U. S. P. XII, became official on July 1, 1944. It was admitted largely because certain manufacturers had demonstrated the feasibility of making preparations suitable for intramuscular use without the further steps of the usual process of purification.

Owing to the lack of correlation in pernicious anemia between neural manifestations and anemia, it was thought that therapeutically useful factors possibly exist in liver extract other than the factor required for hematopoiesis and consequently assayed in terms of U. S. P. units. The experimental studies of Wills and her associates[5] in 1937 upon macrocytic nutritional anemia of monkeys, together with the subsequent clinical studies[6–9] on nutritional macrocytic anemias in various localities, have made it clear that in such patients the factor in liver extract effective in pernicious anemia is inadequate alone to cause hematopoiesis. In some instances relatively unconcentrated liver extracts suitable for intramuscular injection and in all probability not very different from Liver Injection (Crude) U. S. P., were highly effective.[6,7] In others, despite the administration of multiple U. S. P. units (injectable) daily of Liver Injection (Crude) U. S. P.,[9] therapeutic success attended only the oral administration of certain preparations resembling or in fact being Dry or Liquid Liver Extract U. S. P.,[7,8] in some instances when but a single U. S. P. unit (oral) was given daily.[9]

The subject has received further emphasis from the work of L. S. P. Davidson and his associates[8,10] in Scotland in studies of so-called refractory anemias. These patients failed to respond to the injection of large amounts of purified liver extract, then partially responded to 5 or 10 mg. of pteroylglutamic acid daily, but required for complete remission the oral administration of "proteolyzed liver," a preparation cruder than but probably therapeutically equivalent in this respect to the Dry or Liquid Liver Extract U. S. P.

It is of interest that when various preparations of Liver Injection and of Liver Injection (Crude) are compared as to vitamin content, including the *L. casei* factor, there is surprisingly little difference expressed in terms either of the amount in a cubic centimeter or in a single U. S. P. unit.[11] The largest amount of *L. casei* factor in 1 U. S. P. unit (injectable) of any Liver Injection was 0.58 microgram. With the effective oral preparations, in which a U. S. P. unit consists of 45 or 60 cc. of Liquid Liver Extract U. S. P. or 12.75 Gm. of Dry Liver Extract U. S. P., the amounts of riboflavin, niacin and pantothenic acid in a single U. S. P. unit amounted to several milligrams, but the largest amount of *L. casei* factor was only 117 micrograms. It is well known that the other vitamins mentioned are without hematopoietic effect in pernicious anemia. Because a daily dose of at least 1 mg. and frequently 3 to 5 mg. of *L. casei* factor (pteroylglutamic acid) is required for hematopoiesis, it seems unlikely that even in the case of the oral

liver extracts the small amount of *L. Casei* factor was responsible for the superior blood production noted with these liver extracts.

Thus certain instances of nutritional macrocytic anemia with megloblastic bone marrows, and usually with ability to secrete hydrochloric acid in the stomach—which are occasionally seen in severe general malnutrition, in pregnancy, and in the sprue syndrome—may be wholly or partly refractory to Liver Injection U. S. P. The greater effectiveness of the cruder extracts in these patients is apparently due to material other than the principle active in pernicious anemia. This material is probably not the *L. casei* factor (pteroylglutamic acid). It may appropriately be termed "Wills' factor."[8]

The daily oral administration of certain Dry or Liquid Liver Extracts is highly effective in a dosage of 1 U. S. P. unit (oral) comprising 12.75 Gm. or 45 cc., respectively. Extracts resembling Liver Injection (Crude) in daily doses of from 5 to 10 cc. or more may also be effective. Whether similar daily amounts of Liver Injection U. S. P. containing 10 or 15 U. S. P. units per cc. would also be effective remains to be established. Certainly the last would be more expensive. The existence of such relatively uncommon instances of macrocytic anemia refractory to Liver Injection U. S. P. in usual doses should not obscure the well-established effectiveness and economy of concentrated preparations of Liver Injection U. S. P. in the treatment of the majority of nutritional macrocytic anemias, including Addisonian pernicious anemia.

Sensitivity to Liver Extract

The unrecorded experiences of many physicians, as well as several reports[12–14] in the literature, indicate that certain patients, usually women, become sensitized as a result of repeated injections of liver extract. The manifestations vary from mild to severe local or general reactions. The local effects are apparently a type of Arthus phenomenon, usually without necrosis. The general effects may include flushing, itching and urticaria. The general reaction may be accompanied by a peripheral vascular collapse of an alarming character. Such reactions must be differentiated from the immediate effects due to vasodilator substances, which are observed in any subject when liver extract is injected inadvertently, and rapidly into a vein.

Those[15–17] who have undertaken experimental studies to determine the nature of the sensitivity are divided in their conclusions as to whether the effect is due to organ or species sensitivity. Part of the confusion is seemingly due to difficulty in the interpretation of skin tests. When the simple criterion is applied of whether a change to an extract prepared from the liver of a different species fails to cause a reaction, the weight of evidence favors a species sensitivity.[17–19]

In most instances it is apparently feasible to desensitize the patient to any given extract by the frequent injection of progressively increasing doses of liver extract, beginning with 0.1 cc. of a 1:10 dilution, or less, and then continuing the therapeutic dose required by injections at weekly intervals without interruption.[13] It is also possible to obtain complete relief by changing to a liver extract obtained from a different animal species.[17–19]

For this reason it is suggested that manufacturers may desire to produce Liver Injection derived from the livers of a single and specified species, such as beef, pork or sheep. If so, the Board will give approval to the manufacturer for an appropriate and conspicuous statement on the labeling. In the interests of economy, it is recommended that the animal origin of Liver Injection containing only 10 or 15 U. S. P. units (injectable) per cc. be so designated. However, once the species origin of the liver extract has been so indicated, the Board will insist that the greatest care be exercised that even small amounts of liver of other species do not enter into its preparation. Otherwise, severe or even fatal reactions might occur in previously sensitized patients.

Synthetic Pteroylglutamic Acid (Folic Acid)

Synthetic pteroylglutamic acid (folic acid) is the first pure substance to be shown to be effective in pernicious and related macrocytic anemias.[20–23] It is not the component of liver extract active in pernicious anemia. Indeed, the amount of pteroylglutamic acid contained in 1 U. S. P. unit (injectable) of most preparations of Liver Injection is only

a few micrograms,[11,21] whereas significant clinical effects in pernicious anemia require at least from 1 to 5 mg. daily according to various observers.[10,21]

The work of many physicians has established beyond question that the oral or intramuscular administration of the substance brings about prompt hematopoietic and general clinical improvement in pernicious anemia in a fashion that closely resembles the action of liver and stomach preparations. Thus in most instances, the glossitis and other symptoms of gastrointestinal disturbance are promptly relieved. A few observers[25,26] have reported that the reticulocyte response is sub-maximal and that, in spite of adequate and prolonged administration of pteroylglutamic acid, normal red cell values are only slowly attained.

Similar strikingly beneficial effects have been observed in so-called nutritional macrocytic anemias,[20] and in the macrocytic anemias of sprue[22,27] and of pregnancy.[21] In the refractory macrocytic anemias with megaloblastic bone marrow which fail to respond to purified liver extract, a partial response may be obtained with pteroylglutamic acid but complete recovery requires the oral administration of crude liver extracts or their equivalents.[9, 10, 28]

Pteroylglutamic acid is rarely effective in anemias other than those in which liver and stomach preparations are also active. Moreover, in contrast to its excellent hematopoietic activity in pernicious anemia, several authors[24, 25, 29–32] have reported the failure of therapy with pteroylglutamic acid to arrest the progress or to prevent the subsequent development of neurological symptoms and signs. The incidence of the initial appearance of neurological manifestations in such patients has varied from 6 to 80% in different series. Neurological manifestations may develop rapidly many weeks after the blood values have been restored to and maintained at normal levels. *Consequently, in the opinion of the Board, pteroylglutamic acid cannot be recommended as a suitable agent for treatment of pernicious anemia.*

Whatever the explanation, therapy with pteroylglutamic acid appears to carry a potential threat to the nervous system, at least in susceptible individuals. Consequently the present trend toward incorporating it widely in various pharmaceutical preparations cannot be viewed with equanimity. It is of course probable that the addition of pteroylglutamic acid to liver or stomach preparations adds to their hematopoietic potency and it is possible that the presence of the latter will at the same time neutralize the seeming ability of pteroylglutamic acid to permit neurologic lesions to develop.

Unlike liver or stomach preparations—for which the determination of therapeutic potency requires special clinical trials supervised by the Board—pteroylglutamic acid is a pure substance and consequently subject to easily defined biochemical or biologic controls. When pteroylglutamic acid is added to approved liver or stomach preparations, the Board regards the preparation as a mixture in which the hematopoietic activity of the pteroylglutamic acid may be adequately inferred by the physician from the statement of the amount of the compound present. Consequently, the Board will not certify the potency of the combination in terms of U. S. P. units.

W. B. CASTLE, M.D.,
ROBERT W. HEINLE, M.D.
WILLIAM T. SALTER, M.D.
MAXWELL M. WINTROBE, M.D.
RANDOLPH WEST, M.D., *Chairman and Secretary*

RECAPITULATION OF ADVISORY BOARD RULINGS

Limit of Concentration for Injectable Liver Extracts

The Board will not assign to any preparation of Liver Injection U. S. P. a strength greater than 15 U. S. P. units (injectable) per cubic centimeter because of the possibility of loss of unknown factors of value in the treatment of patients with pernicious anemia during the concentration process. Liver Injection, when developed by stopping the processes of extraction at such a stage that the final product is derived directly from an alcohol solution of a concentration not higher than 70%, by volume, of C_2H_5OH, may be labeled as "Liver Injection (Crude)." For the reasons cited above, the maximum strength of Liver Injection (Crude) U. S. P permitted is 2 U. S. P. units (injectable) per cubic centimeter.

Dilutions of Accepted Liver Preparations

A liver extract containing relatively few U. S. P. units should be produced whenever possible by stopping the process of concentration rather than by diluting a more concentrated preparation. However, an accepted preparation of liver extract may be diluted with water or physiological salt solution to obtain an extract of lower U. S. P. unitage. Liver Injection (Crude) must not be prepared by dilution.

Mixture of Other Substances with Liver or Stomach Preparations

Mixtures of liver or stomach preparations for use in the treatment of Addisonian pernicious anemia with other substances are not described in U. S. P. XIII. Consequently, when a Pharmacopœia preparation of liver or stomach is mixed with another preparation, the Board will not define the mixture as containing liver extract or stomach equivalent to a certain number of U. S. P. units. In order to avoid making misleading statements in the event that loss of potency has occurred as a result of the mixture, it is suggested that the manufacturer place an asterisk after the statement of unitage of the liver or stomach preparation and thus refer to a footnote such as "*Potency established prior to mixture with other ingredients" or "*Unitage established prior to compounding."

Liver with Stomach U. S. P. is not regarded as a mixture because the mutally potentiating therapeutic activity of its components is directed toward the same nutritional deficiency. The addition to liver or stomach preparations of "folic acid" (synthetic pteroylglutamic acid), a substance of known chemical composition, constitutes a mixture in the opinion of the Board.

Elective Designation of Species of Animal Liver

Because of the demonstrated sensitivity of certain patients to the injection of liver extracts prepared from a given species of animal, the Board will grant permission to the manufacturers of Liver Injection U. S. P. to designate on the labeling the species of animal liver employed in its preparation. Once so labeled, however, the Board will insist that livers of other species be entirely excluded from the preparation of the product. The purpose of this ruling is to provide information which will allow the physician whose patient has become sensitive to liver extract prepared from one species readily to substitute a liver extract prepared from a different animal species to which the patient may not be sensitive.

SUMMARY OF SPECIFICATIONS OF ANTI-ANEMIA PREPARATIONS U. S. P. XIII

To meet the specifications of United States Pharmacopoeia XIII, liver, stomach or other preparations intended for the treatment of Addisonian pernicious anemia are to be approved by the U. S. P. Anti-anemia Preparations Advisory Board. Approved liver, stomach or other preparations relabeled or repacked by a person other than the original manufacturer or packer are also required to have the approval of the Board.

Applications for approval may be obtained from and shall be submitted to the chairman of the Board by manufacturers on special forms, seven copies being required.

The official names of liver and stomach preparations are as follows:

Liver Extract, *Extractum Hepatis*, Dry Liver Extract.
Liver Solution, *Liquor Hepatis*, Liquid Liver Extract.
Liver Injection, *Injectio Hepatis*, Liver Extract for Parenteral Use.
Liver Injection (Crude).
Liver with Stomach, *Hepar cum Stomacho*.
Powdered Stomach, *Stomachus Pulveratus*, Dried Stomach.

These preparations shall conform to provisions outlined under "Standardization and Other Requirements for Products for the Treatment of Pernicious Anemia," U. S. P. XIII, pages 617–618.

Liver Injection shall conform to additional requirements given under "Injections," "Sterility Test for Liquids," and "Containers for Injections," (except that at times it may show signs of slight turbidity or precipitate). It must not contain more than 0.5% of cresol or of phenol if either is used as a bacteriostatic agent.

LABELING

A. *The Board will supervise the wording of the following requirements:*

1. U. S. P. products shall exhibit on the labeling alone or in addition to a trademark name, the Pharmacopœia name desirably followed by the letters U. S. P.; e.g., "Liver Injection, U. S. P."

2. The potency of preparations as defined by the Board shall be stated on the labeling as follows:

1 (cc., Gm., capsule, etc.) of material prepared by the method employed in producing the contents of this (bottle, vial, package) constitute(s) (no.) U. S. P. units (oral or injectable).

or alternatively as follows:

...(no.) (Gm. or cc.) (capsules, teaspoons, etc.) of material prepared by the method employed in producing the contents of this (bottle, vial, package) constitute(s) 1 U. S. P. unit (oral or injectable).

It is recommended that the first wording be adopted for injectable preparations; the second for preparations for oral administration.

3. The label shall bear a statement of the average dose of the product. The dose so stated shall be a quantity which provides administration at

the rate of not less than 1 U. S. P. unit a day whether given daily or at longer intervals.

4. No statement of the amount of original organ or organs from which the product is derived shall be made on the label.

5. No other or abbreviated statement of U. S. P. unitage shall appear on the labeling unless the small size of individual containers (e.g., 1 or 2 cc.) requires abbreviation for adequate legibility.

6. Before final approval of the product the manufacturer shall submit to the Board seven copies of the proposed labeling to be used upon the finished product.

B. *The Board wishes to call attention to the following requirements of the Food and Drug Administration:*

1. Unless Liver Injection is specifically prepared for intravenous use, the labeling shall designate it as "for intramuscular use."

2. A statement of the preservative used and its strength shall appear on the labeling.

3. The labeling shall designate each multiple-dose container as such.

4. The label on each single-dose container shall note the fact that the container holds a volume in excess of that designated, which excess is only sufficient to permit the withdrawal and administration of the volume indicated.

5. The label on packages holding individual containers for injections in each of which the volume is 20 cc. or less shall bear the notations indicated above for the individual containers.

6. Attention is called to the amendments to the regulations under Section 502 (f) of the Federal Food, Drug and Cosmetic Act: §2.106 *Drugs and devices: directions for use.*

The Board interprets this to mean that preparations intended for oral administration in the treatment of pernicious anemia should bear a statement to that effect. For parenteral preparations, no mention should be made on the labeling of any condition or disease for the treatment of which the product might be used. The present cautionary statement should be retained, possibly in the following form:

Caution: For intramuscular use and only by or on the prescription of a physician.

7. Attention is called to the regulations under Section 502 (b) of the Federal Food Drug and Cosmetic Act which reads as follows: "Regulations (§ 2.102 (a). If a drug or device is not manufactured by the person whose name appears on the label, the name shall be qualified by a phrase, which reveals the connection such person has with such drug or device, such as 'Manufactured for and Packed by ——,' 'Distributed by ——,' or other similar phrase which expresses the facts."

The Board interprets this to mean that a manufacturer would be one who starts with the original liver or a very crude derivative thereof. A packer would be one who starts with bulk Liver Extract, with or without modifying or diluting it, and puts it into final containers. A distributor is one who merely accepts for sale a preparation in final packaged form.

8. Using the terms as just defined above (7) The Board will not approve resale of already approved products by one "distributor" to another, or repackaging of such products by one "distributor" for another. If a "packer" desires to resell an already approved product to a "distributor" or to repackage such a product for a "distributor" the Board will require that the final product be supplied to the "distributor" by the "packer" in completely finished and labeled form.

Sample Label

▼

Multiple Dose Container

Liver Injection U. S. P.

10 cc.

Each cc. of material prepared by the method employed in producing the contents of this vial constitutes 15 U. S. P. units (injectable).

Average dose: equivalent to 0.07 cc. daily. Contains 0.5 per cent phenol.

CAUTION: For intramuscular use and only by or on the prescription of a physician.

Manufactured for and Packed by
Smith Brothers and Company

U. S. P. ANTI-ANEMIA UNIT VALUE ASSIGNED TO ADDITIONAL PRODUCTS

THE following additional products have been assigned unitage by the Anti-Anemia Preparations Advisory Board between January 26, 1943, and May 1, 1948. For other approved anti-anemia products see the First, Second, Third and Fourth U. S. P. Anti-Anemia Announcements.

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.
Liver Injection
0.066 cc.—1 unit (injectable)*
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

ALLEN COLLOID LABORATORIES, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ALPINOL CORPORATION, NEW YORK, N. Y.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

AMERICAN BIO-CHEMICAL COMPANY, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

* Abbreviated form of official statement regarding potency, which is as follows: "1 cc. of material prepared by the method employed in producing the contents of this vial constitutes 15 U. S. P. units (injectable)."

AMPLE PHARMACAL COMPANY, CHICAGO, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)

ANGLO-FRENCH LABORATORIES, NEW YORK, N. Y.
Liver Injecion
0.1 cc.—1unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

APCO PHARMACEUTICAL COMPANY, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ARCHER TAYLOR COMPANY, WICHITA, KAN.
Liver Injection
0.1 cc.—1 unit (injectable)

ARMOUR AND COMPANY (ARMOUR LABORATORIES), CHICAGO, ILL.
Liver Injection
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
Liver Extract
7.5 Gm.—1 unit (oral)
10.0 Gm.—1 unit (oral)

BARLOW-MANEY LABORATORIES, CEDAR RAPIDS, IOWA
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BARRY LABORATORIES, INC., DETROIT, MICH.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BASIC ENDOCRINE SALES COMPANY, SEATTLE, WASH.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BASIC ENDOCRINES, INC., SAN FRANCISCO, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

BELLEVUE LABORATORIES, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

BEN-FOY LABORATORIES, WERNERSVILLE, PA.
Liver Injection
0.1 cc.—1 unit (injectable)

BLENDON BIOCHEMICALS, COLUMBUS, O.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BLUE LINE CHEMICAL COMPANY, SAINT LOUIS, MO.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BOWMAN BROTHERS DRUG COMPANY, CANTON, O.
Liver Injection
0.1 cc.—1 unit (injectable)

GEORGE A. BREON & COMPANY, INC., KANSAS CITY, MO.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BREWER AND COMPANY, INC., WORCESTER, MASS.
Liver Injection
0.066 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)

BRISTOL LABORATORIES, SYRACUSE, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.4 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

BRUCE LABORATORIES, TRENTON, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BUFFALO PHARMACAL COMPANY, BUFFALO, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BUFFINGTON'S INC., WORCESTER, MASS.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

BURROUGHS WELLCOME & COMPANY, NEW YORK, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)

BURTON-LEWIS, INC., SAINT LOUIS, MO.
Liver Injection
0.1 cc.—1 unit (injectable)

CAESAR SURGICAL SUPPLY COMPANY, FLUSHING, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

CALDWELL & BLOOR, MANSFIELD, O.
Liver Injection
0.1 cc.—1 unit (injectable)

CALIFORNIA PHARMACAL COMPANY, LOS ANGELES, CALIF.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

CAMAR PHARMACAL DISTRIBUTORS, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

CAMERON MEDICAL SUPPLY COMPANY, HUNTINGTON PARK, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

CARLO ERBA NEW YORK, INC., NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

CENTRAL PHARMACAL COMPANY, SEYMOUR, IND.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

COLUMBUS PHARMACAL COMPANY, COLUMBUS, O.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

CONTINENTAL MEDICAL SUPPLY COMPANY, PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

CONTINENTAL PHARMACAL COMPANY, CLEVELAND, O.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

COWLEY PHARMACEUTICALS, INC., GILBERTVILLE, MASS.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

DALTONE CHEMICAL COMPANY, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

DARTELL LABORATORIES, LOS ANGELES, CALIF.
Liver Injection
0.25 cc.—1 unit (injectable)

DEE-A PRODUCTS COMPANY, PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)

DELCO CHEMICAL COMPANY, YONKERS, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

DIRECT SALES COMPANY, INC., BUFFALO, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

DRUG PRODUCTS COMPANY, INC., PASSAIC, N. J.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

DUFFIELD DRUG COMPANY, BROOKLYN, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

S. F. DURST & COMPANY, PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)

ELDON H. CANRIGHT COMPANY, GLENDALE, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ELMCHEMISTS, JACKSON HEIGHTS, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

EMPIRE DRUG COMPANY, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ENDO PRODUCTS, INC., NEW YORK, N. Y.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

ENDOCRINE COMPANY, UNION CITY, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)

ESTRO CHEMICAL COMPANY, INC., NEW YORK, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
0.4 cc.—1 unit (injectable)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ETHICAL PHARMACAL COMPANY, SAN ANTONIO, TEX.
Liver Injection
0.1 cc.—1 unit (injectable)

EVRON COMPANY, CHICAGO, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

FERN LABORATORIES, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

FINE CHEMICALS OF CANADA, LTD., TORONTO, CANADA
Liver Extract
1 cc.—1 unit (injectable)

FLINT, EATON & COMPANY, DECATUR, ILL.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

FORBES LABORATORIES, ELGIN, ILL.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

GAMMA PHARMACEUTICAL COMPANY, CHICAGO, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

GOLD LEAF PHARMACAL COMPANY, NEW ROCHELLE, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

GOTHAM PHARMACEUTICAL COMPANY BROOKLYN, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)

HARMAN CHEMICAL COMPANY, INC., BROOKLYN, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

HARROWER LABORATORY, GLENDALE, CALIF.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

J. F. HARTZ COMPANY, DETROIT, MICH.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

G. F. HARVEY COMPANY, SARATOGA SPRINGS, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

HYLAND LABORATORIES, LOS ANGELES, CALIF.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

ILLINOIS BIO COMPANY, CHICAGO, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)

INDUSTRIAL DRUG SUPPLIES, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

INJECTABLE RESEARCH CORPORATION (FORBES LABORATORIES, INC.), ELGIN, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)

INTRA PRODUCTS COMPANY, DENVER, COLO.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

INVENEX LABORATORIES, INC., SAN FRANCISCO, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)

JANDACO MEDICAL SUPPLIES COMPANY (ESTRO CHEMICAL CO., INC.), NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

JEFFREY BIO COMPANY, MEMPHIS, TENN.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)

KAY PHARMACAL COMPANY, TULSA, OKLA.
Liver Injection
0.1 cc.—1 unit (injectable)

C. B. KENDALL COMPANY, INC., INDIANAPOLIS, IND.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

C. F. KIRK COMPANY, NEW YORK, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc—1 unit (injectable)

LAKESIDE LABORATORIES, INC., MILWAUKEE, WIS.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

LANNETT COMPANY, INC., PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

LAXSEED COMPANY, NEW YORK, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

LEDERLE LABORATORIES, PEARL RIVER, N. Y.
Liver Injection
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

LIBERTY VITAMIN CORPORATION, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

LINCOLN LABORATORIES, INC., DECATUR, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)
0.5 cc.—1 unit (injectable)

LONDON RESEARCH LABORATORIES, INC. (ESTRO CHEMICAL COMPANY, INC.) NEW YORK, N. Y.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

LONG ISLAND SURGICAL SUPPLY COMPANY, JAMAICA, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

M. J. LABORATORIES, MIAMI, FLA.
Liver Injection
0.1 cc.—1 unit (injectable)

A. E. MALLARD LABORATORIES, DETROIT, MICH.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

MASSEY LABORATORIES, INC NASHVILLE, TENN.
Liver Injection
0.1 cc.—1 unit (injectable)

S. E. MASSENGILL COMPANY, BRISTOL, TENN.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

H. E. MAURRY BIOLOGICAL COMPANY, LOS ANGELES, CALIF.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

PAUL McCONNELL COMPANY, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

MEDICINALS, INC., RICHMOND HILL, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

MEDI-SYNTH LABORATORIES, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)

WILLIAM S. MERRELL COMPANY, LOESER LABORATORIES DIVISION, CINCINNATI, O.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

MEREDYTH COMPANY, WASHINGTON, D. C.
Liver Injection
0.1 cc.—1 unit (injectable)

METROPOLITAN LABORATORIES, INC., NEW YORK, N. Y.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

MEYER CHEMICAL COMPANY, DETROIT, MICH.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

MID-STATE MEDICAL DEPOT, JACKSON, MICH.
Liver Injection
0.1 cc.—1 unit (injectable)

MID-STATE PHARMACAL COMPANY, BEDFORD, IND.
Liver Injection
0.1 cc.—1 unit (injectable)

E. S. MILLER LABORATORIES, INC., LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

MODERN DRUGS, INC., INDIANAPOLIS, IND.
Liver Injection
0.1 cc.—1 unit (injectable)

ROBERT BRINTON MORRIS LABORATORIES, PITMAN, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)

MUTUAL PHARMACAL COMPANY, SYRACUSE, N. Y.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

NAMAN PHARMACAL COMPANY, LAWRENCE, MASS.
Liver Injection
0.1 cc.—1 unit (injectable)

NATIONAL DRUG COMPANY, PHILADELPHIA, PA.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

NION CORPORATION, LOS ANGELES, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

NOVOCOL CHEMICAL MANUFACTURING COMPANY, BROOKLYN, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)

P. J. NOYES COMPANY, LANCASTER, N. H.
Liver Injection
0.1 cc.—1 unit (injectable)

FRED V. OXLEY COMPANY, FREEPORT, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)

PALCO PHARMACAL COMPANY, ORANGE, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

PARKE, DAVIS & COMPANY, DETROIT, MICH.
Dry Liver Extract
12 Grams—1 unit (oral)

PASADENA RESEARCH LABORATORIES, INC., PASADENA, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

PHILADELPHIA AMPOULE LABORATORIES, PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

PHYSICIANS' DRUG & SUPPLY COMPANY, PHILADELPHIA, PA.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

PITMAN-MOORE COMPANY, INDIANAPOLIS, IND.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK, N. Y.
Liver Injection
0.2 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

RAYMER PHARMACAL COMPANY, PHILADELPHIA, PA.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

REED PHARMACAL PRODUCTS, PHILADELPHIA, PA.
Liver Injection
0.1 cc.—1 unit (injectable)

REED & CARNRICK, JERSEY CITY, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)

REGENCY PHARMACAL COMPANY, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

REMSEN DRUG COMPANY, LONG ISLAND CITY, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

WILLIAM H. RORER, INC., PHILADELPHIA, PA.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

SAVOY DRUG COMPANY, CHICAGO, ILL.
Dry Liver Extract
50 Capsules—1 unit (oral)

HENRY SCHEIN COMPANY, WOODSIDE, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

SHELDON LABORATORIES, INC., LOS ANGELES, CALIF.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)

SHERMAN LABORATORIES, INC., DETROIT, MICH.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

SCHUEMANN-JONES COMPANY, CLEVELAND, O.
Liver Injection
0.1 cc.—1 unit (injectable)

SHARPE AND DOHME, INC., PHILADELPHIA, PA.
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

SMITH DORSEY COMPANY, LINCOLN, NEB.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

SONOROL LABORATORIES, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

G. O. SPANNER, INC., NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

SUTLIFF AND CASE COMPANY, INC., PEORIA, ILL.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

TESTAGAR COMPANY, DETROIT, MICH.
Liver Injection
0.1 cc.—1 unit (injectable)
0.2 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

J. P THIRY & COMPANY, CHATTANOOGA, TENN
Liver Injection
0.066 cc.—1 unit (injectable)
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

E. TOSSE & COMPANY, BROOKLYN, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)
0.25 cc.—1 unit (injectable)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

UNITED LABORATORIES, LTD., PASADENA, CALIF.
Liver Injection
0.1 cc.—1 unit (injectable)

UPJOHN COMPANY, KALAMAZOO, MICH.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

U. S. STANDARD PRODUCTS COMPANY, WOODWORTH, WIS.
Liver Injection
0.066 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

U. S. VITAMIN CORPORATION, NEW YORK, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

VALE CHEMICAL COMPANY, INC., ALLENTOWN, PA.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

VALENTINE'S MEAT JUICE COMPANY, RICHMOND, VA.
Liver Injection (Crude)
1.0 cc.—1 unit (injectable)
Liquid Extract of Liver
45 cc.—1 unit (oral)

VELTEX COMPANY, BIRMINGHAM, ALA.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

VINCENT CHRISTINA & COMPANY, NEW YORK, N. Y.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

VITAMIN CORPORATION OF AMERICA, NEWARK, N. J.
Liver Injection
0.1 cc.—1 unit (injectable)

VITAMIX CORPORATION, BROOKLYN, N. Y.
Liver Injection
0.1 cc.—1 unit (injectable)

WARREN-TEED PRODUCTS COMPANY, COLUMBUS, O.
Liver Injection
0.1 cc.—1 unit (injectable)

WAYNE PHARMACAL SUPPLY COMPANY, FORT WAYNE, IND.
Liver Injection
0.1 cc.—1 unit (injectable)

WILLIAM A. WEBSTER, MEMPHIS, TENN.
Liver Injection
0.1 cc.—1 unit (injectable)

WENDT BRISTOL COMPANY, COLUMBUS, O.
Liver Injection
0.1 cc.—1 unit (injectable)

WHITSON DRUG COMPANY, CHICAGO, ILL.
Liver Injection
0.1 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)

WILSON LABORATORIES, CHICAGO, ILL.
Liver Injection
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

JOHN WYETH & BROTHER, INC., PHILADELPHIA, PA.
Liver Injection (Crude)
0.5 cc.—1 unit (injectable)
1.0 cc.—1 unit (injectable)

ZIEGLER PHARMACAL COMPANY, BUFFALO, N. Y.
Liver Injection
0.1 cc.—1 unit (injctable)
1.0 cc.—1 unit (injectable)

REFERENCES

1. United States Pharmacopoeia Anti-Anemia Preparations Advisory Board: Report on Liver Products. J. Am Pharm. Assoc., 27, 1–8 (1938).
2. Murphy, W. P., and Howard, I.: The use of concentrated liver extracts in pernicious anemia: A survey of the maintenance treatment of one hundred and seventy-six patients under continuous observation for from six months to six and a half years. *J. Am. Med. Assoc.*, 112, 106–110 (1939).
3. Strauss, M. B., Patek, A. J., Jr., Pohle, F. J., Fox, H. J., and Burchenal, J. H.: The treatment of pernicious anemia: A nine year study of maintenance requirements, with a note on the efficacy of purified liver extracts in the control of neural lesions. *N. Eg. J. Med.*, 226, 1013–1015 (1942).
4. Bethell, F. H., and Sturgis, C. C.: The relation of therapy in pernicious anemia to changes in the nervous system. Early and late results in a series of cases observed for periods of not less than ten years and early results of treatment with folic acid. *Blood*, 3, 57–67 (1948).
5. Wills, L., Clutterbuck, P. W., and Evans, B. D. F.: A new factor in the production and cure of macrocytic anemia and its relation to other haemopoietic principles active in pernicious anemia. *Biochem. J.*, 31, 2136–2147 (1937).
6. Napier, L. E., Das Gupta, C. R., Chaudhuri, R. N., Sen, G. N., Rai Chaudhuri, M. N., Sen Gupta, P. C., and Majumder, D. N.: Anahaemin in macrocytic anemia. *Indian Medical Gazette*, 73, 385–390 (1938).
7. Nielsen, O. P.: Some cases of macrocytic hyperchromic anaemia without gastric achylia, their etiology and relation to cryptogenic pernicious anaemia and to a new antianaemic factor. *Acta Med. Scandinav.*, 108, 421–439 (1941).
8. Davis, L. J., and Davidson, L. S. P.: Proteolysed liver in the treatment of refractory anaemias. *Quart. J. Med.*, 13, 53–73 (1944).
9. Watson, J., and Castle, W. B.: Nutritional macrocytic anemia, especially in pregnancy: Response to a substance in liver other than that effective in pernicious anemia. *Am. J. Med. Sc.*, 211, 513–530 (1946).
10. Davidson, L. S. P., and Girdwood, R. H.: Folic acid in treatment of megaloblastic anaemia. *Lancet*, 2, 373–376 (1946).
11. Clark, G. W.: Vitamin content of liver extracts for parenteral use: A comparison of crude and concentrated preparations. *Am. J. Med. Sc.*, 209, 520–524 (1945).
12. McSorley, J. G., and Davidson, L. S. P.: Sensitivity to liver extract. *Brit. M. J.*, 1, 714–716 (1944).
13. Kaufman, R. E., Farmer, L., and Reich, C.: Allergic reactions to liver extract. *Am. Int. Med.*, 19, 768–779 (1943).
14. Schwartz, S. O., and Legere, H.: Treatment of liver extract sensitivity. *Blood*, 1, 307–316 (1946).
15. Criep, L. H.: Allergy to liver extract. *J. Am. Med. Assoc.*, 110, 506–508 (1938).
16. Feinberg, S. M., Alt, H. L., and Young, R. H.: Allergy to injectable liver extracts: clinical and immunological observations. *Ann. Int. Med.*, 18, 311–322 (1943).
17. Bauer, J. L., Watson, R. J., Chamblis, J. R., and Davidson, C. S.: Sensitivity to pork-liver extract in pernicious anemia: Clinical observations in fourteen patients. *N. Eng. J. Med.*, 236, 622–625 (1947).
18. Rynes, S. E., and Tocantins, L. M.: Arthus type of sensitivity to liver extract. *J. Allergy*, 15, 173–181 (1944).
19. Jones, C. A.: Allergic reactions following parenteral administration of liver extract. *Internat. Clin.*, 3, 258–263 (1939).
20. Spies, T. D., Vilter, C. F., Koch, M.D., and Caldwell, M. H.: Observations on the anti-anemic properties of folic acid. *South. Med. J.*, 38, 707–709 (1945).

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BOARD AND COLLEGE MEETINGS AT SAN FRANCISCO

N. A. B. P. MEETING

The National Association of Boards of Pharmacy held its forty-fourth convention at the Fairmont Hotel in San Francisco on August 9 and 10 with forty-two boards of pharmacy represented.

In his annual address, President Frank Moudry reviewed the objectives of the Association and recommended publication of a "Board of Pharmacy Manual" for the guidance of board members and officers in discharging their duties. He also recommended repeal of provisions for the examination and licensure of assistant pharmacists in the few states where this provision still exists.

President Moudry also recommended assembling data needed for the publication of a directory of pharmacists by the AMERICAN PHARMACEUTICAL ASSOCIATION. He likewise urged board action to assist in the elimination of unprofessional and undignified advertising on the part of pharmacists.

In discussing the supply of pharmacies and pharmacists, Mr. Moudry said:

"I believe we have sufficient pharmacies or drugstores today to adequately take care of the pharmaceutical needs of the public. It may be," he continued, "that they are not adequately distributed. What is needed is not more stores, but better and bigger stores; stores that do sufficient volume of business to require the services of two or more pharmacists, rather than more one-man stores where it is necessary for the pharmacist to become a slave to his business. True, there will always be need for one-man stores to serve the public in small towns and communities, but we should set as our ideal the operation of drugstores manned by more than one pharmacist and work toward it."

President Moudry suggested that the colleges of pharmacy might be in a position to help in preventing overcrowding of the profession by "attempting to determine the future needs for pharmacists and limiting enrollments accordingly. It is far better to have a controlled supply of pharmacists than an uncontrolled surplus," Mr. Moudry said.

Secretary P. H. Costello's annual report revealed the changes in board membership and presented informative data relating to the number, ages and qualifications of applicants for reciprocal licensure and compared this with similar data about pharmacists in practice and reciprocal applicants of previous years.

The report briefly summarized state legislation that had been dealt with.

Licensure statistics and the census of pharmacy were presented in a published report which was distributed and included a series of tabulations and a summary which reveals the number and qualifications of persons examined and licensed, the number deceased and reinstated, net additions to the profession, the number and engagement of all pharmacists in practice, their ages and qualifications, the number of pharmacies and the number serviced by one, two, three, four or five or more pharmacists, respectively.

Also distributed as a supplement to the report was a publication compiled by the secretary which listed by states all colleges of pharmacy in the United States, including those which had ceased to function, and related information about them which was needed by boards of pharmacy.

CONFERENCE OF PHARMACEUTICAL LAW ENFORCEMENT OFFICIALS

Mr. Carl Wynkoop, Deputy Attorney General of California, discussed the relation of his office to pharmacy law enforcement in California and Dr. R. W. Weilerstein, medical officer, Western District, Federal Food and Drug Administration, discussed the application of the Food, Drug and Cosmetic Act, with respect to the practice of pharmacy, giving considerable emphasis to the provisions applicable to dangerous drugs and labeling. A forum discussion was conducted thereafter by Chairman Dretzka at which the speakers answered a barrage of questions in the time allotted for that purpose.

JOINT SESSION A. A. C. P.-N. A. B. P.

The educational value of supervised practical experience was the subject of a panel discussion for this session. A. A. C. P. President Uhl presented N. A. B. P. President Moudry as moderator after which the legal aspects, college, board and practitioner viewpoints, respectively, were formally and briefly presented by P. H. Costello, E. R. Serles, Wilbur E. Powers and Max Lemberger. An informal discussion during which the panel members were called upon to answer numerous questions relative to the subject consumed the remaining time allotted to this after-dinner session.

N. A. B. P. OFFICERS

The following officers were elected for the ensuing year: Honorary President, Paul Eckels, Louisiana; President, Newell Stewart, Arizona; Vice-President, William B. Shangraw, Vermont; Secretary, P. H. Costello, Illinois; Treasurer, Robert L. Swain, New York; Executive Committee member, Frank W. Moudry, Minnesota; Resolutions Committee member, L. W. Funk, Ohio.

A. A. C. P. MEETING

Most of the accredited colleges of pharmacy were represented at the forty-ninth meeting of the American Association of Colleges of Pharmacy held at the Mark Hopkins Hotel, San Francisco, August 8 to 10.

In addition to the three general sessions of the Association, there were teachers' conferences on pharmacy, chemistry, biological sciences, pharmaceutical economics and graduate instruction.

Progress in the direction of coordinating the professional and cultural courses required as a preparation for the practice of pharmacy was reported by Dr. Arthur H. Uhl, president of the Association in his annual address.

"There has been hardly one dissenting voice in all the recent discussions on pharmaceutical education as to the need for intensification and expansion of the curriculum," Dr. Uhl pointed out in his address. "There have been different opinions as to the time of study necessary for this intensification and expansion," he continued.

"Only a six-year course can give to pharmacy the separation between the so-called 'cultural' and 'professional' disciplines," said Dr. Uhl. "Only such a course, concluded and crowned with a doctor's degree on the same level as the doctor of medicine and doctor of dentistry can guarantee the position of pharmacy in and cooperation with the health professions," he concluded.

Dr. Uhl also pointed out that the six-year pharmacy course leading to a doctor's degree is not to be confused with graduate study in this field which would lead to the degree of doctor of philosophy or doctor of science. Those contemplating research in the field of pharmacy require additional preparation over and beyond that which is required to attain the highest level of perfection in the practice of the profession. He cautioned pharmacy schools desiring to introduce graduate study that the personnel and facilities needed for the development of such study are expensive and difficult to acquire.

Dr. Uhl had high praise for the National Pharmaceutical Survey which has been carried on during the past two years under the direction of Dr. Edward C. Elliott, former president of Purdue University, and he echoed the latter's observation that if colleges and schools of pharmacy can be induced to carry on a continuous program of predictive and other student testing, one of the major objectives of the survey will have been accomplished. He also urged the American Association of Colleges of Pharmacy to have its executive committee sponsor a plan for approval and introduction of predictive and achievement tests as one of the requirements for membership in the Association.

Teaching seminars to be held annually for the purpose of orienting and informing teachers in colleges of pharmacy were strongly advocated by Dr. Uhl as a means of adding to the services of the Association to pharmaceutical education. Lectureship tours which would include the delivery of a lecture or series of lectures at each of the colleges of pharmacy by a qualified individual were recommended as additional sources of inspiration and information for pharmacy faculties and students.

President Uhl also praised the work of the Medical Service Corps of the United States Army and Colonel O. F. Goriup, its chief, in developing pharmacy R. O. T. C. units at colleges of pharmacy and coordinating these with R. O. T. C. units in medical and allied

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The Pharmaceutical Change of Life

by John A. MacCartney

THE subject selected for these remarks, "The Pharmaceutical Change of Life," may surprise you, and some may wonder just why it was chosen. I believe that it expresses exactly the situation in which pharmacy finds itself today. We had a vigorous youth; and in the past several decades, we have seen retail pharmacy reach a stature of very great importance in the United States. But now, we suddenly are aware that something is happening. We are irritable—we quarrel among ourselves—one phase of drug distribution accuses another of selfishness and downright conspiracy to defraud. We are having hot flashes over our own illogical actions and cold chills in contemplation of the inroads of competitive types of retail business.

Let's see if we can confirm this diagnosis and perhaps prescribe some treatment. Perhaps we should adjust to a new way of living —a new outlook on our patrons and our competitors—and a new "in-look" on ourselves.

In the September 6, 1947, issue of *Business Week* there was an article entitled "The Druggist's Plight." This writer, in reporting on the present situation of the retail pharmacist, obtained the material for his observations at the meeting of the A. PH. A. in Milwaukee. He reports that pharmacists are in a dilemma. He says that our chief stock in trade has always been our status as professional men and that this has helped us in a number of ways, including the public confidence and preference it generates in the products we distribute, even if those same products are available in other types of establishments. He says we use our legal franchise as dispensers of health items to stay open and sell non-drug items on Sundays, holidays, at night, and so on, when other stores must close. He reports that our professional status has slipped in recent years and projects our eventual fate as that of sandwich men.

Now, I'm sure this opinion will come as a surprise to many of you who have seen your professional status and your professional practice go steadily and profitably ahead during those same years. Further, this writer tells us that the chief reason for our dilemma is the rise in sales of "ethical proprietary preparations." Here we have a new class of items—"ethical proprietary preparations" which presumably are, or will be, sold in any sort of retail store. Let's look at this a moment and ask just what he is talking about. He may be right; and at least he has focused attention on something that needs discussion and action.

Pharmacists are concerned, as he says, with their professional status; but I do not believe that many feel it is declining. Rather, it is *changing*—we are having a "change of life." Change need not be decline—it is just as often improvement, and evolution, and adaptation. Our professional status is changing, to be sure; and why should it not? We have all heard some of our family members bemoan the passing of the "good old days" when the pharmacist was his

Adapted from a copyrighted address presented before various state pharmaceutical meetings.

own exclusive compounder. Maybe this is what this writer is talking about.

Overlooked, or not considered, is the fact that this same evolution in prescription practice has raised the average fee for a prescription from less than 50 cents to over $1.33, which includes an increased net income for the pharmacist. This evolution has given the patient far more for every cent he spends for medicine—in better therapy, in better forms, in stable and standardized products. Important, too, in the status of today's pharmacist is the fact that he is, or should be, more than just a compounder—he is achieving his rightful place as the professional consultant and partner of the physician, and his services as such should be recognized by the physician.

Duplication of Pharmaceuticals

In those "good old days," there *was* one problem in prescription practice which did not exist—a problem which, today, plagues every well-stocked prescription room. I refer to the constant complaint of pharmacists that the manufacturers flood the market with products that are practically duplicates of one another, and that, as a result, the pharmacist must stock dozens of items of very similar therapeutic nature simply because physicians specify brands and trade names.

Certainly this situation increases inventory and, if not watched, can reduce prescription profit to the vanishing point. But, the very fact that there is this wide and overlapping range of ethical products offers the alert retail pharmacist his greatest opportunity to prove himself to be a true partner with the physician. The doctor, constantly solicited by hundreds of detail men, is just as confused as you are—yes, even more so, since he cannot hope to remember all the details of differences among the products competing for his preference. You, if you are well informed, can rapidly become the physician's consultant on therapy. You can advise him in such a way as to confine his specification to fewer lines. This will reduce your required inventory appreciably, yet at the same time enhance your profit and your status as an authority on therapeutic agents. In this way, the evolution from the "good old days" can be made to serve you personally, just as it has benefited the practice of medicine and the health of the public.

This evolution closely parallels that of medical practice. In medicine today, there are few spectacular advances announced from the corner office. Clinical research groups and hospital centers, having available large and specialized research teams and with many patients on whom to evaluate their knowledge, are the source of much of medicine's advance. The pharmacist has closely identified himself with this work, both in the laboratories of pure research and in those of manufacturing pharmacy where methods for making the products of research are developed and from which these products can be made available to the public in practical form.

The writer to whom I have referred says our legal franchise is disappearing, and he is absolutely right. In California, in Wisconsin, and in many other states, items which the pharmacist has considered his exclusive franchise to sell have been, by law, turned over to filling stations, grocery stores, super-markets, or anyone who wishes to sell them. You may say this is nothing new—that certain drug items in ready-prepared packages have been sold in non-drugstores for years. But, non-drug outlets are fighting for more such items—and getting them! They feel that if a pharmacist invades their field, they have an equal right to invade his.

Futility of Restrictive Legislation

Here is a cloud now no larger perhaps than a man's head, but it is growing—with the full blessing of the law. It illustrates the futility of dependence on restrictive legislation alone to protect and preserve your stock in trade.

Now what are we going to do about it? Reams have been written on this subject, but the general approach has been: "Let's pass some more laws;" "Let's restrict the sale of this or that to the pharmacist." Laws are fine and, where they can be passed, will temporarily hold some of this business; but remember, in the final analysis, no restrictive legislation will substitute for public approval and acceptance. Let me emphasize that I am in complete agreement with every effort to develop better legisla-

tion to protect pharmacy. However, we must remember that such laws must work *both* ways.

Let's assume, for the moment, that the law says no one but you—a registered pharmacist—may sell vitamins, and, in fact, in some states this has been so. Such a law applies to all pharmacists in that state—but what happens? Someone comes into the drugstore for this item. Who sells it to him? Frequently, it it a non-registered clerk or the soda boy. The impression the customer receives is obvious.

Just how long do you think the public is going to approve of or comply with a law if we do not enforce it upon ourselves?

Just how long can we continue to argue the necessity for our professional ability to dispense such products properly, unless *we*, as pharmacists, contribute to public health and safety by giving that personal attention to the distribution of all medicines?

We all know that laws governing pharmacy are necessary, just as they are for the practice of medicine; but how far do you think physicians would get if they demanded a law forcing people to go to them when they are sick? They know that they must obey the laws which govern their profession. But they know, too, that public confidence in their ability and public approval of the way they conduct their profession are the final criteria by which their status is judged and their reputation established.

Tragic Lack of Unity

If our professional franchise is disappearing, it must be a challenge not only to organized pharmacy but to each one of us as an individual. Especially, it must be a challenge to each of us since the retail pharmacy is the vital point—the front line of contact with the public—where you and your profession are judged by your habits and actions. Dr. Edward C. Elliott, director of the Pharmaceutical Survey, in reporting the preliminary results of this study, has said that "pharmacy shows a striking, even tragic, lack of unity."

If we do lack real unity, and if we are to take an important part in health service and distribution, it follows that we have a job to do—one that pharmaceutical leaders recognize, but some pharmacists do not—a job of intensive, coordinated, well-planned, and probably expensive public relations. Several starts have been made on this job, and the necessity for doing it is becoming clear; but it must have the absolute support of the man who stands to gain most from its success—the retail pharmacist.

Now, how about these "ethical proprietary medicines?" The author of "The Druggist's Plight" believes that the development of laboratory-made "ethical" medicines has resulted in a sharp drop in pharmacists' prescription sales. I do not intend to go into the economic statistics of volume in this discussion, but I cannot allow this statement to go unchallenged—nor will you. Laboratory-made "ethical" medicines have proved their economic necessity to modern medicine—and *they are sold on prescription*, not over the counter. This is so both by preferential practice and by law. Their development and growth have *not* resulted in a loss of business, but in a huge and continuing gain, both in profit and in service to the public health.

Rx Stock Control

To return a moment, here, to what you can do to control the size of your prescription specialty stock, I have a suggestion. You all have heard the old saying: "Don't put all your eggs in one basket." The late Henry Ford is credited with a slightly different philosophy. He said: "Put all your eggs in one basket—*and then watch the basket.*" Too many pharmacists, as the new prescription specialty "eggs" keep flowing into their stocks, slide the new items into the shelf or drawer space and soon are quite unable to remember whether the item is selling well or not.

Too often, in this way, an item acquires shelf room and adds to inventory cost only to become, unnoticed, a "bad egg" with little or no prescription demand. Many alert retail pharmacists are setting aside a definite shelf section for new prescription specialty items, and every new product goes in this section until it has earned its right to a place in regular stock. In this way a lot of potential "bad eggs" never seriously inflate prescription room inventories.

Too, this plan will keep the manufacturer's sales and detail staff on their toes since they will have the evidence before

them if the product is not being prescribed as they predicted when you stocked it. If this "new item shelf" is combined with an adequate file of reference literature, it will serve another purpose. You can use it to call the visiting physician's attention to your alertness in obtaining new items, and it gives you a fine opportunity to impress him with your knowledge of medical advances.

Dr. Elliott says we pharmacists are the most important men in medicine today. Here is your real status; here is your challenge—individually and as a group—to awaken the public to the indispensable job you do in applying control, and judgment, and professional ability to the distribution of medicines. But *you* have to prove it—and keep everlastingly proving it. You can't legislate it—you must live it!

Some students of retail business react with disgust to our howls of anguish when other retail outlets invade what we consider our exclusive preserves and insist that much of our domain was acquired without any contribution from us. They say that many products, and even whole groups of products, especially in the "over the counter" field, were introduced through drugstores, not because the products required any special selling skill or professional discretion, but because drugstores were prevalent, well located as a rule, and enjoyed an unusual public confidence. Therefore, say these observers, we have little reason to complain when the bulk of this business shifts to ordinary retail outlets.

The following editorial appeared in the *Denver Post* for July 18, 1947, under the title "They Sell Drugs Too":

> "Druggists at a convention in Colorado Springs heard complaints that grocery stores now are selling patent medicines.
>
> "Druggists may not be aware of it, but their business is being threatened in other quarters, too. We feel that they should be warned. Believe it or not, hardware stores are selling screwdrivers, sporting goods stores are selling tennis rackets, tobacco shops are selling cigarettes, and clothing stores are selling raincoats.
>
> "Extreme alarmists say bookstores are even selling books, but that probably is a gross canard. Unless restaurants begin serving meals, the druggists need not become too concerned, however, especially since it seems certain that the post office will not be able to encroach seriously on the postage stamp business."

To me, that editorial is a poor joke—in keeping with those sandwich-making stories—but it is a good indictment of many of our attitudes toward competition.

A Proud Structure

There is, however, one field of profitable operation in which the retail pharmacist need not fear the inroads of any other merchant, one field which is his exclusively, both by law and by public preference—the prescription department. It is no storm cellar to which he must retreat from the cyclone of competition—it is, or should be, in every pharmacy worthy of the name, a proud structure of professional competence and service. It is proving itself, also, to be a citadel of the pharmacist's financial strength.

Note this important fact—in the prescription department in 1946, the average fee received for a prescription was $1.33. In the remainder of the establishment, the average sale was less than 50¢. Note also that as prescription sales volume goes up, the gross margin increases faster than corresponding sales increases in any other department. To phrase it another way, it means that for the effort you put forth to bring a buying dollar into your drugstore, you will realize, both in volume and in profit, almost three times as much from the prescription sale as from any other.

To any sensible pharmacist, these figures should be a clear guide as to where to put his major investment and to make his major effort. When your prescription department is growing, so are you—in every way. You are growing in professional stature, in indispensability to the public, and in profit. But, many pharmacists have forgotten, and some refuse to believe these facts. They pay little or no attention to their prescription department, and they concentrate their time and money in frantic competition with every merchant in town—from the garage to the saloon—and they scatter their efforts over a dozen unrelated fields; whereas if they would only figure a few percentages, they would realize that in their basic profession lie their destiny and their best chance for profit—in competition, to be sure, *but only with other pharmacists*. It is retail pharmacy's best chance for survival and hope for the future.

Now, these comments may make it appear that I advocate the abandonment of all departments in the drugstore except the pre-

scription department. Such is certainly not my intent or purpose. Your related departments and many of those classified as non-drug departments are, I believe, a permanent part of the pharmacy, but they must be given their proper perspective in the picture—they do not deserve to dominate, as they have in so many drugstores in the recent past.

These other departments, or I should say the traditional ones, deserve their place in the drugstore's service to the community. In many drugstores, they are the only economic basis which permits the pharmacist to offer his professional services and still make a living. They are, too, an outstanding testimonial to the fact that the pharmacist—more than any other distributor—through the years has done a consistently good job of being a specialist in a dozen varied fields.

But, in complying with the demands of his community, he has sometimes had to engage in fields of retailing that have become highly competitive, and many now feel that his status as a professional man has suffered badly.

So, in the final analysis we, as a group, need a treatment for our "change of life"—a treatment that will make us forget the alleged pleasures of the "good old days." We seem already to have forgotten their faults. We need a stimulant to awaken us to the importance of our new destiny as professional men. We need, and we must have, a big dose of public relations. All right, you will say, let's pass some resolutions; let's let our overworked association secretary do it.

Public Relations A Science

And why do we say that? First, because the term "public relations" sounds like some abstract science or, to many, like bizarre and costly efforts to get our name in the gossip columns. Public relations has nothing to do with the bizarre or freakish, and it is a remarkably exact science, one you have known and even used all your life—the science of preference, the science of good will, the science of service.

But, it's not only an association job, although no better way could probably be found to head it up; it is a job for every one of us, as individuals, day by day. Pharmacy must put on a better show of public relations, *and pharmacists* must act out all the parts. I make no exceptions—the man behind the prescription counter, the employee, the pharmacist in the hospital, the pharmacist in the laboratory, most certainly those of us who represent the field of manufacturing pharmacists, and any experts hired for special promotions and purposes.

You who are retail pharmacists may be assured of one thing: The manufacturer who has any sense of, or appreciation of, his future possibilities is willing and eager to do all or more than his part. But, it must be a sort of Marshall Plan—help, and plenty of it, for those who help themselves. It is a collossal job—national in scope, and embracing every phase of our professional existence, from the pharmacy schools, the state boards, the state associations, through you—the men who must do the most—to the public and to our sister profession, medicine.

The makers of pharmaceutical products are doing some of the job that must be done. Notable in these efforts are a number of radio programs devoted to the practicing pharmacist and an important series of national advertisements published solely in the interest of the pharmacist.

A Public Relations Program

Now I would like to make some suggestions on public relations for retail pharmacy, a program to start at the top level, but one to be operative right down to your own home town—your own pharmacy.

First: Organized pharmacy should map a realistic program of public relations, designed specifically for pharmacy, and retain competent public relations counsel to execute it. Not just a program of a few minor news releases, not a program tied to pictures of bathing beauties, but one with a specific aim and with public appeal, based perhaps on the revelations of the Pharmaceutical Survey. Such counsel should work with those in pharmacy but be sufficiently detached as to retain a completely objective view of our problems.

Second: Individually and through your associations, pharmacists should endorse and comply with the resolution passed by the joint session of the Council of the A. PH. A. and the Executive Committee of the

N. A. R. D. to eliminate the words "Cut Rate" from pharmacy. The use of that term—cut rate—is one of the most damning pieces of negative public relations which pharmacy ever perpetrated upon itself. In any event, the term is practically meaningless since the advent of Fair Trade Laws.

Third: Do the things *you* can do, right in your own home town. Among these things are:

1. Become better acquainted with the editors of your local papers. If you are not already well acquainted with them, cultivate them. Find out what stories they like; what they do not. And, help the editor get his bread and butter—advertise consistently. After all, he is most interested in the success of *his* business, just as you are in yours.

2. Look at the calendar. Note which dates are appropriate for tying your drugstore in with publicity relating to pharmacy. And, do something, say something at appropriate times, that will boost pharmacy, your drugstore, and you. Use professional window displays often, and especially when they will best tie in with publicity.

3. Here are some of the opportunities to identify you and your pharmacy with planned promotion; and note that I refer to these as opportunities for you to publicize yourself and your profession. I do not refer to their customary use as advertising campaigns for seasonal merchandise. They are:

a. First Aid Week
b. Baby Week
c. Pharmacy Week
d. Easter
e. Spring gardening
f. Spring house cleaning
g. Animal and agricultural advice

Fourth: Take full advantage of your association and its meetings.
Tell your local editor you're going. Tell him when and where. Tell him why—to learn the latest developments in combating disease, latest ideas in drugs or beauty accessories, and the like. It's news; and it marks you as a progressive and up-and-coming pharmacist.

Fifth: Get all the help you can. Your professional publications, your mails, your manufacturers' salesmen are full of information about new drugs. Often you can pass on facts concerning such new developments without invading the physicians' preserves (don't suggest diagnostic ideas or self-use), and your words will impress many people in the community with your knowledge of your profession.

Sixth: Stand up and speak up. When opportunity presents itself, be ready to get on your feet and talk. If the Rotary, Kiwanis, Chamber of Commerce, or any other local organization wants a speaker, be ready —don't turn them down. Most national associations, and perhaps your state or local organization, will have ample material on hand that you may adapt to such a talk, to the credit of pharmacy, if you request it.

These are but a few of the many opportunities which you have daily and weekly in your community to boost your profession. If you, the local pharmacist, make some statement or offer some advice in the printed page that is helpful or useful to your fellow men, it boosts you in their eyes; and since you *are* pharmacy to them, you boost your whole profession. One word of caution—be very sure you do not infringe on the physician. Remember always that you are his co-worker, not his interpreter.

Obviously, if pharmaceutical organizations get behind some such program and help to prepare such material, slanted at the grass-roots, the task will be easier for you; but you don't have to wait for that—take these suggestions to heart, do a little planning for yourself, and you can start your own public relations program for pharmacy right where it will do the most good—right in your own drugstore—in your own community.

In conclusion, remember what Dr. Elliott has said—that we have a tragic lack of unity. Remember, too, that our efforts to retain and enhance public esteem must be coherent and cohesive; we cannot pull in a dozen different directions. The associations, local, state, and national, can lead the way—but they need more from you than lip service or resolutions—they will need man power and funds. Give these, and every ounce of effort, every dime, will come back to you a thousand-fold in public esteem of your place as a vital part of the public health team; in confidence in your special place in the retail business picture; and in the financial success richly deserved by a man who is making a real contribution to our way of life.

the public's health--

your first concern

ORAL CANCER

No. 5 in a Series

• • • • • • •

A SORE in the mouth may be of no significance—or it may be cancer. If it is cancer, immediate diagnosis is essential. Although most early cases of cancer of the mouth can be cured, about 7500 people in this country die of cancer of the mouth each year, largely because treatment comes too late.

Many people who have a sore in their mouth go to the pharmacist before they go to a physician. They usually complain of a raw spot, a wart, a canker sore or a rough spot. *Pharmacists can save many lives each year by advising anyone who has any of these mouth conditions that do not heal or show some improvement within a week to seek medical advice without delay.*

Often the condition is not cancer but a precursor that may lead to cancer if untreated. Leukoplakia or "Smoker's Patch," as it is sometimes known, is frequently a prelude to cancer. It appears as a white, patchy thickening of the lining of the mouth or the surface of the tongue. It may be so thin as to be filmy in appearance—like dried milk—or in advanced cases may have a thicker, lumpy appearance. The thicker leukoplakias may be cancerous underneath.

The dividing line between precancerous lesions and early cancer is not always distinct. But because treatment of a precancerous lesion may prevent cancer, persons with any of the following mouth conditions should be urged to see their doctor: localized thickenings causing little pain, non-healing hardening cracks or chronic fissures, projecting bits of tissue constantly being irritated, and abrasions caused by jagged teeth.

The earliest manifestation of oral cancer may be a small, hard nodule or ulcer. If treatment begins at this stage, before extensive spreading takes place, the possibilities for cure are good. When a lump that appears in the neck, following mouth cancer, grows slowly larger and is not tender or painful, it may indicate that mouth cancer is beginning to spread. This constitutes a medical emergency that demands immediate medical attention.

The only way to be sure whether a mouth lesion is cancer is biopsy—removal of a small bit of the suspected tissue by a physician for microscopic examination.

Of all sores that can occur in the mouth, the most dangerous is cancer. A sore in the mouth may not represent cancer since syphilis, tuberculosis and many other conditions may also produce oral lesions. But if it is cancer, a few weeks' delay in seeking medical treatment may become a decisive factor. For this reason, non-healing lesions should be regarded with suspicion until the possibility of cancer is ruled out by competent diagnosis. If it is cancer, no one can afford to act on the assumption that it may be something else.

The pharmacist who is alert to the possibilities of cancer in the buccal cavity, and familiar with its symptoms, can be the motivating force which sends a patient to a physician for the early diagnosis which may save a life.

LILLY DIGEST . . .

OPERATING STATEMENTS OF 1947

ALTHOUGH drugstore net profits in 1947 showed a decrease as compared with 1946 figures, prescription receipts and prescription profits continued on an upward trend. Thus concludes the forthcoming *Lilly Digest* of an analysis of data from 1,113 retail pharmacies of the nation, of which 739 supplied separate and specific figures on operation of the prescription department.

According to the *Digest*, some pharmacies would have suffered a serious decrease in sales and profits if it had not been for the continued rise in prescription volume. "The development of the prescription department offers a drugstore owner the best possible protection against future drops in sales and resulting expense rises and losses," the report stated.

The average revenue derived from prescriptions in the 739 pharmacies was $12,271 in 1947, compared with $10,299 in 1946, $8477 in 1945 and $6952 in 1944. Prescriptions for 1947 represented 16.6% of total sales.

Table I shows the separation of prescription receipts from other sales in the 739 pharmacies in 1947. The corresponding figures for the number of pharmacies indicated for the three preceding years are also shown in Table I. In addition, the year-to-year change in prescription receipts and other sales has been computed.

It is apparent at once that prescription receipts in pharmacies have been going up at a more rapid rate than other sales. Thus, the rise in prescription receipts has contributed more than its share to the year-to-year gains in total sales, which are also revealed in Table I.

"It might be contended that there is a relation between this disproportionate rise in pharmacy prescription receipts and the falling off in pharmacy profits which is evident from the figures in Table VIII," the *Digest* states. In fact, a compilation of prescription receipts, other income, and costs, margins and profits of 102 identical stores reveals that profits apparently reached their peak in 1946. These facts appear in Table No. II.

From the figures in Table II for those 102 stores, it is evident that without the increase in prescription receipts in 1947, the total sales would have stood at virtually the same figures as in 1946. These pharmacies had

TABLE I—SEPARATION OF PRESCRIPTION RECEIPTS FROM OTHER SALES IN PHARMACIES

	1947 (739 stores)	1946 (678 stores)	1945 (677 stores)	1944 (697 stores)
Average income per store from prescriptions	$12,271	$10,299	$ 8,477	$ 6,952
Other sales per store	61,755	55,037	51,430	44,063
Total sales per store	$74,026	$65,336	$59,907	$51,015
Dollar change from preceding year:				
Prescription receipts	$ 1,972	$ 1,822	$ 1,525	...
Other sales	6,718	3,607	7,367	...
Total sales	$ 8,690	$ 5,429	$ 8,892	...
Per cent change from preceding year:				
Prescription receipts	19.2%	21.5%	21.9%	...
Other sales	12.2%	7.0%	12.2%	...
Total sales	13.3%	9.1%	17.4%	...

TABLE II—YEAR-TO-YEAR CHANGE IN PRESCRIPTION RECEIPTS, OTHER SALES, COSTS, MARGINS, AND PROFITS IN 102 IDENTICAL STORES

	1947	1946	1945	1944
Average income per store from prescriptions..	$12,687— 20.9%	$10,286— 17.8%	$ 8,507— 17.6%	$ 7,095— 16.2%
Other sales per store..	48,066— 79.1%	47,437— 82.2%	39,992— 82.4%	36,675— 83.8%
Total sales per store...	$60,753—100.0%	$57,723—100.0%	$48,499—100.0%	$43,770—100.0%
Cost of goods sold.....	40,281— 66.3%	38.365— 66.5%	31,384— 64.7%	28,557— 65.2%
Gross margin.....	$20,472— 33.7%	$19,358— 33.5%	$17,115— 35.3%	$15,213— 34.8%
Store expenses.....	15,327— 25.2%	13,806— 23.9%	11,597— 23.9%	10,395— 23.7%
Net profit.....	$ 5,145— 8.5%	$ 5,552— 9.6%	$ 5,518— 11.4%	$ 4,818— 11.1%
Change from preceding year:				
Prescriptions.....	$ 2,401— 23.4%	$ 1,779— 20.9%	$ 1,412— 19.9%	
Other sales.....	629— 1.3%	7,445— 18.6%	3,317— 9.0%	
Total sales.....	$ 3,030— 5.2%	$ 9,224— 19.0%	$ 4,729— 10.8%	
Cost of goods sold.....	1,916— 5.0%	6,981— 22.2%	2,827— 9.9%	
Gross margin.....	$ 1,114— 5.8%	$ 2,243— 13.1%	$ 1,902— 12.5%	
Store expenses.....	1,521— 11.0%	2,209— 19.0%	1,202— 11.6%	
Net profit.....(—)$ 407—(—)7.3%		$ 34— 0.6%	$ 700— 14.5%	

the same success as is revealed in Table VIII for all stores in obtaining fully as large a gross margin on sales in 1947 as in 1946. Their success in this direction is probably related to the rise in prescription receipts. The professional services which are involved in prescription filling in a pharmacy necessarily produce for the proprietor a larger gross margin than he can obtain from supplying articles with which no professional services are required.

This suggests that although total sales of pharmacies are still rising, a peak may be at hand in receipts from other than prescriptions. Another study which is part of the *Digest* reveals that this is more than a speculative possibility for some proprietors.

Of the 739 proprietors who were able to supply a report of their prescription receipts, there were 253 who supplied the same figures for 1946. A study of these 253 stores which were able to supply figures on prescription receipts for both 1947 and 1946 showed that eighty-five of them had smaller total sales in

TABLE III—EFFECT OF A DECREASE IN SALES ON DRUGSTORE COSTS AND PROFITS

	1947	1946	Dollar change	Per Cent change	Per Cent of total sales—1947	Per Cent of total sales—1946
Average income per store from prescriptions.....	$10,060	$ 9,045	$1,015	11.1%	15.7%	13.3%
Other sales per store.....	53,891	58,709	(—) 4,818	(—) 8.2%	84.3%	86.7%
Total sales per store.....	$63,951	$67,754	(—)$3,803	(—) 5.6%	100.0%	100.0%
Cost of goods sold.....	42,542	44,932	(—) 2,390	(—) 5.3%	66.5%	66.3%
Gross margin.....	$21,409	$22,822	(—)$1,413	(—) 6.2%	33.5%	33.7%
Store expenses.....	16,533	15,478	1,055	6.8%	25.9%	22.8%
Net profit.....	$ 4,876	$ 7,344	(—)$2,468	(—) 33.6%	7.6%	10.9%

TABLE IV—AVERAGE COSTS, MARGINS, AND PROFITS OF DRUGSTORES COMPOUNDING IN 1947

	1 to 5 prescriptions daily	5 to 10 prescriptions daily	10 to 20 prescriptions daily	20 to 40 prescriptions daily	40 and up prescriptions daily
Sales	$48,879—100.0%	$54,090—100.0%	$62,783—100.0%	$79,828—100.0%	$126,345—100.0%
Cost of goods sold	34,289— 70.2%	37,530— 69.4%	43,204— 68.8%	53,268— 66.7%	81,278— 64.3%
Gross margin	$14,590— 29.8%	$16,560— 30.6%	$19,579— 31.2%	$26,560— 33.3%	$ 45,067— 35.7%
Total expenses	11,419— 23.3%	12,569— 23.2%	15,404— 24.5%	20,386— 25.6%	$ 33,828— 26.8%
Net profit	$ 3,171— 6.5%	$ 3,991— 7.4%	$ 4,175— 6.7%	$ 6,174— 7.7%	$ 11,239— 8.9%
Value at cost of merchandise stock	$8373	$9226	$10,566	$13,546	$18,481
Value at cost of prescription department stock	$1083	$1575	$2489	$3368	$5869
Prescription receipts	$1505	$4097	$7803	$14,604	$34,290
Number of prescriptions filled	1058	2796	5519	10,373	24,569
Average price for prescriptions	$1.42	$1.47	$1.41	$1.41	$1.40
Annual rate of turnover of merchandise stock	4.1 times	4.1 times	4.1 times	3.9 times	4.4 times
Percentage of prescription department stock to total merchandise stock	12.9%	17.1%	23.6%	24.9%	31.8%
Percentage of prescription receipts to total sales	3.1%	7.6%	12.4%	18.3%	27.1%
Prescription-sales revenue per each dollar invested in prescription stock	$1.39	$2.60	$3.13	$4.33	$5.84
Average net profit per dollar invested in all store merchandise	$0.38	$0.43	$0.40	$0.46	$0.61

1947 than in 1946. A compilation of the costs, margins, and profits of these eighty-five stores, therefore, reveals the actual effect on profits of such a fall in sales in the past year. This compilation appears here as Table III.

The average decrease in total sales per store was 5.6%. It will be seen from Table III that if the proprietors of these stores had not been successful in obtaining the 11.1% increase in prescription receipts, the drop in total sales would have been even larger than that which actually occurred.

Table IV reveals the average costs, margins, and profits of the 739 pharmacies, classified according to the daily volume of prescription practice. A number of significant conclusions can be drawn from a study of the table. Some of these are:

1. A rise in the proportion of prescription receipts to total sales results in an increase in the average gross margin.
2. Such an increase also results in a rise in the proportion of the receipts paid for store expenses.
3. The growth in store expenses does not occur at as rapid a rate as the increase in gross margins. Consequently, the net profit on sales tends to rise with an increase in the proportion of the receipts from prescriptions.
4. Therefore, a proprietor faced with a fall in sales need have no fear that his efforts to increase prescription receipts will result in a costly rise in store expenses.
5. Neither is a proprietor with a desire to

TABLE V—DISTRIBUTION OF PHARMACIES BY SIZE OF CITY AND NUMBER OF PRESCRIPTIONS FILLED IN 1947

Population	Prescriptions Compounded Daily				
	1 to 5	5 to 10	10 to 20	20 to 40	40 and up
Under 5000	57%	44%	34%	38%	23%
5000 to 20,000	12%	15%	19%	18%	40%
20,000 to 50,000	7%	10%	7%	12%	15%
50,000 to 100,000	8%	2%	8%	5%	9%
100,000 to 500,000	8%	16%	17%	14%	7%
Over 500,000	8%	13%	15%	13%	6%
Total	100%	100%	100%	100%	100%

TABLE VI—GEOGRAPHICAL DISTRIBUTION OF PHARMACIES BY NUMBER OF PRESCRIPTIONS FILLED IN 1947

	Prescriptions Compounded Daily				
	1 to 5	5 to 10	10 to 20	20 to 40	40 and up
New England States	3%	7%	8%	3%	8%
Middle Atlantic States	9%	15%	20%	21%	12%
East North Central States	47%	30%	20%	14%	17%
West North Central States	25%	19%	15%	13%	11%
South Atlantic States	1%	3%	10%	8%	16%
East South Central States	1%	3%	3%	7%	10%
West South Central States	3%	8%	5%	14%	13%
Mountain States	3%	6%	5%	6%	2%
Pacific States	8%	9%	14%	14%	11%
United States	16%	15%	28%	24%	17%

increase the prescription receipts of his store faced with a big prescription stock enlargement. Table IV shows that the rise in prescription department stock with an increase in prescription receipts takes place at a slower rate than the increase in sales.

6. Thus, with a rise in the proportion of prescription receipts to total sales, there is a large and unmistakable increase in the rate of return on the money that is invested in the prescription stock department.

7. The final gain from prescription department activities is revealed in the last line of Table IV. There is an unmistakable upward trend in the average net profit per dollar invested in all store merchandise. This upward trend goes along with a rise in the proportion of prescription receipts to total sales.

Opportunities for the successful operation of a prescription department are to be found in communities of all sizes, as shown by Table V.

Table VI points out, in addition, that opportunities for the development of a busy prescription department exist in all parts of the country.

Prescription receipts are a source of year-round income and profit in pharmacies. Table VII shows that the number of prescriptions filled in the summer months is scarcely one-sixth lower than it is in January.

The 1947 *Lilly Digest* concludes that "a busy prescription department is the best safeguard against deflation. One of the most encouraging facts that has been revealed in this and earlier editions of the *Lilly Digest* has been that prescription filling in a drug store is not merely a source of professional pride and satisfaction. It is also a highly profitable activity. This is to be expected. A proprietor who gives time, money and energy to obtain a license to practice pharmacy is likely to be far more skilled in the profession than he is in any branch of retail trade or in any other occupation that he may enter."

The over-all sales in pharmacies in 1947, including all departments, increased to a new peak—averaging $76,520. In 1932 average sales were only $24,454 and in 1942 were $40,514.

However, rising operating expenses cut profits down from 8.6% in 1946 to 7.0% for

TABLE VII—MONTH-TO-MONTH FLUCTUATIONS IN PRESCRIPTIONS BY NUMBER FILLED PER STORE

	J	*F*	*M*	*A*	*M*	*J*	*J*	*A*	*S*	*O*	*N*	*D*
Stores compounding in 1947:												
1 to 5 prescriptions daily	100	90	112	98	91	88	92	96	100	104	98	116
5 to 10 prescriptions daily	100	91	114	98	92	84	84	91	96	101	97	109
10 to 20 prescriptions daily	100	92	112	96	91	83	83	87	93	98	96	105
20 to 40 prescriptions daily	100	94	116	97	92	85	88	90	95	99	95	107
40 and up prescriptions daily	100	94	113	94	92	85	86	89	93	97	92	103
Average	100	93	114	95	92	84	86	89	94	98	94	105

1947. This is shown in Table VIII. Ordinarily, when sales rise in a pharmacy, the normal tendency is for profits to go up at a more rapid rate than sales. A considerable part of the costs of operating a pharmacy do not change with rises or drops in the volume of sales. Thus, with an increase in sales, the ordinary expectation would be for these fixed costs to take a reduced part of the increased sales. According to the *Lilly Digest*, there was no such increase in profits in 1947. On the other hand, a rise occurred in both the percentage and the dollar amount of expenses.

Table VIII also reveals that the increase in the cost value of the merchandise stock occurred at a more rapid rate than the increase in sales. Consequently, the average rate of turnover of the merchandise stock was lower in 1947 than in 1946. This, too, is not the result ordinarily to be expected.

Concluding, the *Lilly Digest* states that this is a particularly dangerous time for pharmacists to be without accurate annual inventories of merchandise stock evaluated at present-day market prices. There have been and there are going to be frequent and rapid shifts in prices. Therefore, proprietors need the facts about the value and kinds of goods they have. Although inventory taking is not easy, the *Digest* states it can be greatly simplified by following these five simple steps:

1. Listing—Write the name of each article, using one line for each style, size or color. List the contents of one case, wall section, or other separate part of the stock before starting the listing of another.

2. Counting—Count the number on hand of each article listed. Usually these quantities are recorded in dozens and fractions of a dozen. Complete one section or case before going to another.

3. Pricing—Enter the cost price per dozen or other selling unit for each item listed.

4. Extending—Determine and record the cost value of the quantity on hand.

5. Totaling—Total, page by page, to obtain the value of the entire merchandise stock.

TABLE VIII—AVERAGE COSTS AND PROFITS OF PHARMACIES IN 1947 AND 1946

	1947		1946	
Sales		$76,520—100.0%		$69,422—100.0%
Cost of goods sold		51,812— 67.7%		46,995— 67.7%
Gross margin		$24,708— 32.3%		$22,427— 32.3%
Expenses:				
Proprietor's or manager's salary	$5200—6.8%		$4590—6.5%	
Employees' wages	7360—9.6%		6270—9.0%	
Rent	2070—2.7%		1950—2.8%	
Heat	305—0.4%		270—0.4%	
Light and power	532—0.7%		475—0.7%	
Taxes (except on building, income, and profit) and licenses	448—0.6%		418—0.6%	
Insurance	298—0.4%		264—0.4%	
Interest paid	84—0.1%		60—0.1%	
Repairs	385—0.5%		195—0.3%	
Delivery	224—0.3%		118—0.2%	
Advertising	523—0.7%		413—0.6%	
Miscellaneous	1220—1.6%		905—1.3%	
Estimated total depreciation except on buildings	462—0.6%		352—0.5%	
Bad debts charged off	81—0.1%		63—0.1%	
Telephone	154—0.2%		133—0.2%	
Total expenses		$19,346— 25.3%		$16,476— 23.7%
Net profit		$ 5,362— 7.0%		$ 5,951— 8.6%
Value at cost of merchandise stock		$12,257		$10,487
Annual rate of turnover of merchandise stock		4.2 times		4.5 times

science news capsules

$23,000,000 is spent each year in pharmaceutical research in the United States according to Dr. Robert L. Jones, Abbott Laboratories. Reporting in the Chicago *Journal of Commerce*, he states that thusly the pharmaceutical industry fulfills its obligation of constantly preparing new and better drugs, of making them available at a lower price, and of maintaining high standards of quality and purity.

DETAILED CELL STUDY, never before possible, has opened new paths in cancer research, states Dr. Samuel C. Harvey, professor of surgery in the Yale School of Medicine. Breakdown of the body's fundamental unit has been brought about by the use of recently developed instruments such as the electron microscope and the ultracentrifuge. The new information "may well point the way to an understanding of the difference between . . . cells that have gotten out of hand and those which are normal," according to Dr. Harvey.

CHIGGER-PROOF clothing that will stay that way for the life of the garment is a definite possibility as a result of U. S. Department of Agriculture research that has continued since the end of the war. Two organic compounds, phenyl carbonate and x,x′-dichlorodiphenyl ether, have been used to impregnate cloth from which garments are made. The material has remained deadly to chiggers after seven launderings.

LACK OF REFRIGERATION contributes substantially to the frequency of food poisoning in the United States, Assistant Surgeon General Mark D. Hollis, chief of the Sanitary Engineering Division, Public Health Service, Federal Security Agency, said recently. In 1946 there were 299 outbreaks of disease from contaminated food incapacitating 12,526 people, 17 of whom died. The food was usually contaminated through insanitary conditions or infections of food handlers. More important, however, early and adequate refrigeration was lacking. Even if contaminated, food will not usually develop toxins and cause food poisoning if properly refrigerated promptly after preparation.

ESTABLISHMENT of the National Heart Institute as one of the National Institutes of Health in the Public Health Service has been announced by Oscar R. Ewing, Federal Security Administrator. The National Heart Institute was created by Congress in the National Heart Act, approved by President Truman, June 16, 1948. The law authorizes the Public Health Service to develop a broad attack upon cardiovascular diseases, now the leading cause of death in the United States.

WHY the wonder drug, streptomycin, gives disappointing results when used to fight pulmonary or lung tuberculosis seems to have been discovered. The sputum protects the germs, tubercle bacilli, against the streptomycin. When the tubercle bacilli lie on surface lesions such as ulcers of the larynx and vocal cords, the response to the treatment is dramatic, Dr. Herta Schwabacher of the British Ministry of Health Laboratory has reported.

COLUMBIA UNIVERSITY has officially announced that extensive tests of the new antivirus sulfa drug, phenosulfazole (Darvisul) upon human patients suffering from infantile paralysis are under way through cooperation of five research teams in New York, Texas and North Carolina. Although no results upon human cases were reported, the new drug was stated to have "successfully halted a polio virus in the mouse" in a series of investigations at Columbia University and the Lederle Laboratories.

FORMATION of the Arthritis and Rheumatism Foundation was made known in connection with the recent meeting of the American Association for the Advancement of Science. The power of basic medical research is to be turned upon this disease which attacks one out of every twenty persons. A fund of $2,000,000 for the purpose is to be raised beginning November 15.

PHLOEM NECROSIS, an elm tree disease even more deadly than the more widely publicized Dutch elm disease, can be carried from sick to healthy trees by leaf hoppers, small insects so inconspicuous that most people never notice them.

BEST of all chemicals tested in a five-year search for local anesthetics is SKF 538-A, a complex quinoline synthesized by a new method. Reported to the recent American Chemical Society meeting, its pain-killing effect in animal experiments lasted much longer than cocaine, procaine or dibucaine.

ATOM-BOMB rays at Bikini had profound effects on the offspring descended from grains of seedcorn

exposed at the time of the air burst at Bikini in the summer of 1946. Dr. E. G. Anderson of the California Institute of Technology states in a report to the National Academy of Sciences that more than half of the functioning germ cells of plants from seed thus exposed carry one or more gene mutations, or sudden evolutionary shifts, caused by the radiations.

SCIENTISTS in the various states can do much to make more effective the administration of a National Science Foundation, when created, through their knowledge of local scientific facilities and their acquaintance with promising up-coming younger scientists, Dr. Frank Thone of Science Service pointed out at the annual Conference of State Academies of Science called by the American Association for the Advancement of Science. Dr. Thone spoke as representative of the Washington Academy of Sciences. Scientists in State Academies, he suggested, will undoubtedly put forward their young candidates for Science Foundation scholarships and fellowships without special urging, because all scientists take pride in the later accomplishments of their better students. State Academies, however, should also look over their own memberships and help already established teachers in the smaller colleges to obtain research grants that may mean the difference between their doing valuable research and not having time to do it.

SEROTONIN, a pure crystalline substance capable of affecting the caliber of blood vessels, has been isolated from blood serum by Maurice M. Rapport and associates of the Research Division of the Cleveland Clinic Foundation, it was recently announced. Although the presence of this substance in serum has been known for more than 80 years, its physiological function still remains to be defined clearly. Serotonin, as purified from beef serum, contains both nitrogen and sulfur and is believed to be a sulfate salt (*Science*, 108: 329, 1948).

CYCLOBUTANE, a new anesthetic gas, has been produced by Dr. John C. Krantz, Jr., professor of pharmacology at the University of Maryland's Medical School. Used in four surgical cases, the gas was found to be potent and produced excellent relaxation with a minimum of side reactions. Cost of the gas is said to be enormous at the present time.

A PAINLESS penicillin cure for abscesses which leaves no scars is reported by Dr. Harry J. Cohen, New York City, in the *Journal of the American Medical Association*. Pus is drawn from the abscess with a large needle to which a syringe is attached and replaced with approximately the same amount of penicillin solution. Advantages of the new treatment are: treatment can be given in the office or home; elimination of anesthesia; and elimination of dressings.

Andrew G. DuMez

. . . . . from p. 659

accomplish its ends. But we also need steady hands, and heads which react on the basis of experience, in order that the machine may function without suffering destruction or accidents on the way.

Much of Dr. DuMez's busy life was devoted to teaching and he developed a splendid school of pharmacy at the University of Maryland. In addition to the undergraduate instruction furnished and the inspiration given those whose goal was the practice of pharmacy, he also developed a fine program of graduate instruction which supplied teachers and research pharmacists for many institutions.

Dr. DuMez's experience and steadfastness were great assets to American pharmacy. His contributions to the development of pharmacy were perhaps not of the spectacular type. They belong in the category of the long-range, steadying influence which the profession needs so badly. He was not moved by proposals that seemed expedient. He required proof that any proposal had not only the elements of success but also the factual background to assure its adequacy. He believed in facing the facts no matter how distasteful they might be to American pharmacy and working out ways and means for correcting unfavorable situations which would win respect for the profession in the long run. Typical of this trait was the manner in which, as president of the A.PH.A., he tackled the widely publicized inaction of pharmacists in cooperating with the drive to stamp out venereal disease and offered the cooperation of the AMERICAN PHARMACEUTICAL ASSOCIATION in reversing this trend. This cooperation was accepted by the American Social Hygiene Association and the U. S. Public Health Service, so that within a span of eight years there was a complete reversal in the manner in which pharmacists reacted to this public health program.

Dean DuMez was quite fearless in his denunciation of inadequate educational programs and he was instrumental in bringing about great changes for the better in many phases of pharmaceutical education. He has left our midst at a time when the cumulative force and effect of his wide experience and store of knowledge can least be spared.

A. Ph. A. Branches

LOCAL BRANCHES

THE FIRST meeting of this season of the **Northwestern Ohio Branch** featured an address by Dr. Lyle W. Kahler, practicing physician of Toledo. Dr. Kahler, who is also a pharmacist, discussed "Trends in Pharmacy and Medicine."

Reorganization of the **Cincinnati Branch,** which took place in February of this year, has brought another group back into the fold. It is through the efforts of the Cincinnati College of Pharmacy that the Branch, which has been inactive for some years, has been re-born. Attendance at the sessions has been good, drawing members not only from the City of Cincinnati but also from near-by Northern Kentucky communities. Officers elected at the reorganization meeting are: John S. Beatty, president; David Uhlfelder, treasurer; and Simon Mendelsohn, secretary.

Nearly 600 sources of 16-mm. films for teachers and school administrators are listed in a 28-page directory recently issued by the Office of Education, Federal Security Agency. Copies of the directory, entitled "A Partial List of 16 mm. Film Libraries," are available without cost from the Visual Aids Section of the Office of Education, Federal Security Agency, Washington 25, D. C.

STUDENT BRANCHES

The **University of Arizona Branch** was officially launched when presentation of its charter was made by A. Ph. A. President Sylvester H. Dretzka at a dinner meeting on August 5. More than 140 persons were present and speakers included Dr. J. Byron McCormick, president of the University; Newell Stewart, secretary of the Arizona State Pharmaceutical Association; Dr. Robert L. Nugent, vice-president of the University; Dr. Richard A. Harvill, dean of the liberal arts college; and Mr. J. Edward Richardson, past president of the Michigan Pharmaceutical Association. Accepting the charter on behalf of his organization, Wayne Fishburn, president of the student group said: "The students . . . will endeavor to uphold the standard of the profession of pharmacy, to better it, and to lift it to unlimited heights."

Reports of regular meetings held by the **University of Utah Branch** through May of this year show that this group, under the guiding hand of Dr. L. David Hiner, Dean of the School of Pharmacy, is well organized and forward-looking. Speakers and musical entertainment have been featured at the meetings and a dinner dance was planned as a special event. At the May meeting, which was the final session until the fall term, the following officers were elected: Joseph D. Halgren, president; Max Padfield, vice-president; Ann Marie Outzen, secretary; Ray Spencer, editor; and Robert Ovard, assistant editor. Lawrence Pryor and Douglas Smith were elected as Sophomore and Junior Class Representatives, respectively, and Wallace Thorup will serve as business manager.

Fifth Announcement

. . . . . .from p. 669

21. Moore, C. V., Bierbaum, O. S. Welch, A., D. and Wright, L. D.: The activity of synthetic *Lacto-bacillus* Casei factor ("folic acid") as an antipernicious anemia substance. I. *J. Lab. and Clin. Med.*, 30, 1056–1069 (1945).
22. Darby, W. J., and Jones, E.: The treatment of sprue with synthetic *L. casei* factor (folic acid, Vitamin M). *Proc. Soc. Exper. Biol. and Med.*, 60, 259–260 (1945).
23. Zuelzer, W. W.: Folic acid therapy in the anemias o infancy and childhood. *J. Am. Med. Assoc.*, 131, 7–8 (1946).
24. Ross, J. F., Belding, H., and Paegel, B. L.: The development and progression of subacute combined degeneration of the spinal cord in patients with pernicious anemia treated with synthetic pteroylglutamic (folic) acid. *Blood*, 3, 68–90 (1948).
25. Meyer, L. M.: Folic acid in treatment of pernicious anemia. *Blood*, 2, 50–62 (1947).
26. Tuttle, M. J., and Scott, J. W.: Folic acid in treatment of pernicious anaemia. *Canad. Med. Assoc. J.*, 56, 396–400 (1947).
27. Suárez, R. M., Spies, R. D., and Suarez, R. M., Jr.: Use of folic acid in sprue. *Ann. Int. Med.*, 26, 643–677 (1947).
28. Davidson, L. S. P., and Girdwood, R. H.: Folic acid as a therapeutic agent. *Brit. M. J.*, 1, 587–591 (1947).
29. Vilter, C. F., Vilter, R. W., and Spies, T. D.: Treatment of pernicious anemia and related anemias with synthetic folic acid. I. Observations on maintenance of normal hematologic status and on occurrence of combined system disease at the end of one year. *J. Lab. and Clin. Med.*, 32, 262–273 (1947).
30. Heinle, R. W., and Welch, A. D.: Folic acid in pernicious anemia: failure to prevent neurologic relapse. *J. Am. Med. Assoc.*, 133, 739–741 (1947).
31. Hall, B. E., and Watkins, C. H.: Experience with pteroylglutamic (synthetic folic) acid in the treatment of pernicious anemia. *J. Lab. and Clin. Med.*, 32, 622–634 (1947).
32. Wagley, P. F.: Neurologic disturbances with folic acid therapy. *N. Eng. J. Med.*, 238, 11–15 (1948).

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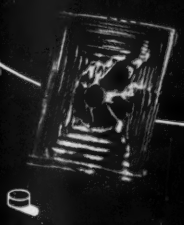

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and the prescribed dose is ready for administration.

Aerosol inhalation therapy in the home is rendered exceedingly simple when Soluble Tablets Crystalline Penicillin G Potassium are prescribed. Each tablet contains 50,000 units of penicillin, the usual single dose, and is entirely free of binder or excipient. The tablet is simply dropped into the nebulizer, 10 to 15 minims of water or saline solution are added, and the patient can then receive the treatment. Thus the need for first dissolving the penicillin and then measuring the required dose is obviated entirely. Soluble Tablets Crystalline Penicillin G Potassium dissolve rapidly with slight agitation. Available at your wholesaler now in boxes of 24, each tablet individually wrapped in foil.

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INFORMATION SERVICE

Members of the American Pharmaceutical Association are invited to submit their professional problems to the Journal, 2215 Constitution Ave., N. W., Washington 7, D. C., giving all pertinent details. Advisory service is provided by the A. Ph. A. library and technical staff and the Journal panel of technical consultants.

WHAT IS TRIANDENYL?

Do you have any information concerning an ampul containing Triandenyl?—M. B., Colorado.

Triandenyl is a German registered trademark name for adenosine triphosphate and is supplied under this name by Dr. Georg Henning, Gmb. H., Berlin, Tempelhof. This product, which is recommended for use in a variety of cardiac disorders, has not been used as a drug in the United States, so far as we have been able to determine and it is doubtful whether dosage forms can be obtained other than from the German manufacturer. Adenosine triphosphate is available in the United States from the Nutrition Biochemicals Corp , Cleveland 5, Ohio.

BACITRACIN

Do you have information on Bacitracin, an antibiotic used for the treatment of colitis?—R. O., Ohio

This antibiotic is manufactured and distributed by the Ben Venue Laboratories, Inc., Bedford, Ohio. For further information concerning its application in the treatment of colitis and the dosage employed for this purpose, it is suggested that you direct an inquiry to the manufacturer. For additional information, the following references are cited: "Bacitracin Therapy," *J. Amer. Med. Assoc.* (133: 675, 1947), and "Local Use of Bacitracin," J L. Miller *et al.*, *Journal of Investigative Dermatology* (10: 215, 1948).

HOW MUCH IS A TEASPOONFUL?

We have the following prescription from a physician who has asked us to obtain accurate information concerning the volume capacity of a teaspoon and also, if possible, how much potassium chloride can be taken safely;

Potassium chloride..... ℥ i
Aqua qs ad..... ℥ iv
Sig: One teaspoonful six times a day, in water.

—F. C., Vermont

In an article entitled "How Much Is a Teaspoonful?" by F. W. Nitrady, which was published in the August, 1934, issue of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, it was indicated that the correct volume capacity of a teaspoon is 5 cc.

Concerning potassium chloride, Goodman and Gilman in their authoritative textbook, "The Pharmacological Basis of Therapeutics," state in part:

"Potassium is readily absorbed from th gastrointestinal tract and parenteral sites of administration. The source of potassium is the diet which invariably supplies an adequate amount, inasmuch as the ion is widel distributed in all plant and animal cells. Potassium which is not retained by the organism for cell composition is rapidly excreted. The kidney tubules reject potassium efficiently and even if large amounts are given by mouth, the salts of this ion are excreted so quickly that it is difficult to detect any change in the blood concentration

f potassium. This renal rejection of potassium is the basis for the *diuretic action* of otassium salts."

The above information indicates that the margin between a therapeutic dose and a xic dose of potassium chloride must be de. This is further borne out by the tatement in the same book that "Potassium ay be taken orally in large amounts without untoward effect." Goodman and Gilman also state that the usual dose of potassium chloride in the treatment of Ménière's isease is 6 to 10 Gm. daily in divided doses.

COMPOUNDING PROBLEM

How can the following prescription be compounded:

Acriflavine	*0.1*	*parts*
Thymol	*0.005*	*parts*
White wax	*4.0*	*parts*
Liquid paraffin	*76.0*	*parts*
Distilled water	*20.0*	*parts*

Make 8 ounces.

—*S. S., Alabama*

It is evident that the physician has omitted the emulsifying agent in this prescription and hence it is not fillable in the present state. The most stable combination, it is believed, employs 1 part triethanolamine and 1 part stearic acid. Heat these two substances together on a water bath until melting is complete. Then add the wax and melt; finally add the liquid paraffin. Dissolve the acriflavine in this oily mixture and likewise the thymol. To this mixture add the water, previously warmed to the same temperature, notably about 60 to 70° C., with constant stirring and permit the mixture to cool to room temperature. Although this emulsion appears to be stable for several days, it is recommended that it be dispensed with a "shake well" label.

HYALURONIDASE

Can you tell us who manufactures hyaluronidase? We should also like to know a substitute for starch as a disintegrator for tablets where the patient is allergic to starch.—W. G., Texas.

Hyaluronidase has been recently developed by Wyeth, Inc., under the trademark name "Hydase Injection" and is presently available only directly to physicians under conditions prescribed by law for drugs requiring further clinical investigation. The possible uses of hyaluronidase are described in some detail in the August, 1948, issue of "Pulse of Pharmacy" which is published by Wyeth Inc., 1600 Arch St., Philadelphia 3.

No first-hand information is available here concerning tablet disintegrators other than starch. The latest edition of Remington's Practice of Pharmacy, however, states that talc, kaolin or tricalcium phosphate may be used as a disintegrator in tablets. No details or formulations in which they are used are available.

During the recent meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, Mr. B. E. Benton of the University of Illinois College of Pharmacy, Chicago, Ill., reported on the successful use of dried bentonite as a disintegrating agent in compressed tablets of thyroid.

Colloidal substances such as pectin and agar which are capable of swelling on contact with water have also been used but are said to be not as satisfactory as starch.

CASTRIX

Please give us any available information concerning the new rodenticide, Castrix.—G. G., Kentucky

Castrix is not commercially available at present. It has been manufactured in the United States in relatively small quantities for pharmacological investigation by the J. T. Baker Chemical Co., Phillipsburg, N. J.

ADMITTED TO N. F.?

Have Crysticillin and Duracillin been officially added to the latest revision of the National Formulary?—R. R., Michigan.

You are probably aware that Crysticillin is the registered trademark name of E. R. Squibb and Sons for crystalline procaine penicillin G in oil, and that Duracillin is the registered trademark name of Eli Lilly and Co. for the same product. Crystalline procaine penicillin G in oil has not been admitted to the National Formulary. The quality of this product is controlled by the Federal Food and Drug Administration in accordance with the provisions of Sections 507 and 701 (a) of the Federal Food, Drug and Cosmetic Act.

NNR

PRODUCTS RECENTLY ACCEPTED BY THE A. M. A. COUNCIL ON PHARMACY AND CHEMISTRY

Council descriptions of drug products are published regularly in THIS JOURNAL *as they are accepted. Rules upon which the Council bases its action appeared in the July (7:320) 1946 issue, and may be secured in pamphlet form upon request to the Secretary, Council on Pharmacy and Chemistry, American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.*

BLOOD GROUP SPECIFIC SUBSTANCES A AND B.—A sterile solution of polysaccharide-amino acid complexes, capable of reducing the titer of the anti-A and anti-B isoagglutinins of group O donor blood. Blood group specific substance A is isolated as a precipitate from a tryptic digest of hog gastric mucin. Group specific substance B is isolated as a precipitate from a tryptic digest of the glandular portion of horse gastric mucosa.

Actions and Uses.—Blood Group Specific Substances A and B, when added to group O blood, renders the latter safe for transfusion into patients having other blood groups. While this eliminates reaction attributable to the corresponding isoagglutinins, it should be kept in mind that group O blood may continue to give rise to reactions due to pyrogens, Rh incompatibility and immunologic unknowns.

Dosage.—Blood Group Specific Substances A and B may be added to group O blood just prior to administration or at the time of collection and storage. One transfusion unit (10 cc.) is capable of reducing the anti-A and anti-B isoagglutinin titer of 500 cc. of group O blood to at least one-fourth of its original titer.

Sharp & Dohme, Inc., Philadelphia

Blood Group Specific Substances A and B: 10-cc. vials. Preserved with phenol 3%.

U. S. Patent reissue 22208 (Expiration Date July 14, 1959).

DIETHYLSTILBESTROL (See New and Nonofficial Remedies, 1947, p. 347):

The following additional dosage form has been accepted:

E. S. Miller Laboratories, Inc., Los Angeles

Solution Diethylstilbestrol in Oil with Benzocaine 2%: 0.5 mg. per cc., in sesame oil with Benzocaine 2%, 1-cc. ampuls. Preserved with cresol 0.5%.

ESTROGENIC SUBSTANCES (WATER INSOLUBLE) (See New and Nonofficial Remedies, 1947, p. 343).

The following dosage form has been accepted:

E. R. Squibb & Sons, New York

Pessaries Amniotin: 2000 and 5000 I. U. Each pessary contains sufficient estrogenic substances (water insoluble) in corn oil to provide the stated unitage expressed in terms of estrone, enclosed in a soft gelatin capsule for use as a vaginal suppository.

MEPERIDINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1947, p. 28).

The following dosage forms have been accepted:

Winthrop-Stearns, Inc., New York

Demerol Hydrochloride (Powder): 15-Gm. vials.

Solution Demerol Hydrochloride: 50 mg. per cc., 30-cc. vials.

HEXESTROL (See New and Nonofficial Remedies, 1947, p. 353).

The following dosage form has been accepted:

S. E. Massengill Co., Bristol, Tenn.

Tablets Hexestrol: 3 mg.

PHENOBARBITAL SODIUM-U. S. P. (See New and Nonofficial Remedies, 1947, p. 418).

The following dosage form has been accepted:

The Wm. S. Merrell Co., Cincinnati

Solution Phenobarbital Sodium with Benzyl Alcohol 2% in Propylene Glycol 70%: 0.12 Gm. and 0.3 Gm., 2-cc. ampuls.

STREPTOMYCIN (See New and Nonofficial Remedies, 1947, p. 150).

The following dosage form has been accepted:

The Wm. S. Merrell Co., Cincinnati

Streptomycin Calcium Chloride Complex: 1.3 Gm., 20-cc. vials. 1.3 Gm. of Streptomycin Calcium Chloride Complex equivalent to 1.0 Gm. of Streptomycin base.

DIETHYLSTILBESTROL (See New and Nonofficial Remedies, 1947, p. 347).

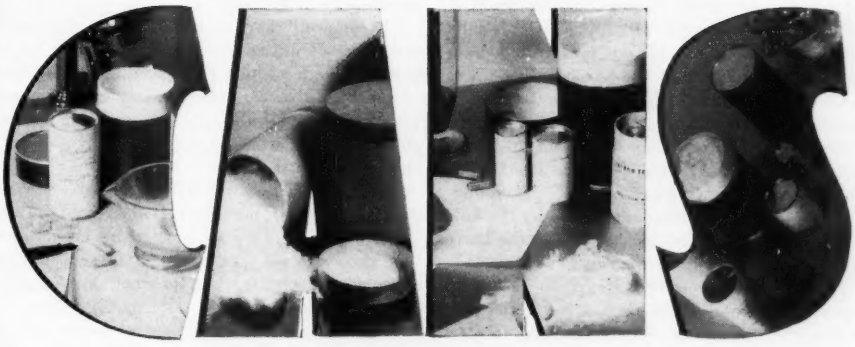
The following dosage form has been accepted:

Estro Chemical Co., Inc., New York.

Solution Diethylstilbestrol in Oil: 1 mg., 2 mg., and 5 mg. per cc.; 1-cc. ampuls and 30-cc. vials in corn oil. Preserved with chlorobutanol 0.5 per cent.

CHLORGUANIDINE HYDROCHLORIDE. Guanatol - Lilly.—N^1 - (*p* - chlorophenyl) - N^5 - isopropylbiguanide hydrochloride.—$C_{11}H_{16}N_5Cl.HCl$.—M. W. 290.2.

Actions and Uses.—Chlorguanide hydrochloride is useful for the prophylaxis, suppression and treatment of malignant tertian (*Plasmodium falciparum*) malaria and for the suppression and treatment of benign tertian (*Plasmodium vivax*) malaria with the



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Size	Diameter	Height	Per Gross	Weight Per Cent.	No. to Cont.
No. 1	1 inch	2¼ inches	$ 3.00	3¼ pounds	1 gross
No. 2	1¼ inch	2¼ inches	3.40	4½ pounds	1 gross
No. 3	1⅝ inch	2¼ inches	3.75	6 pounds	1 gross
No. 35	1⅞ inch	2¼ inches	4.20	7¾ pounds	1 gross
No. 4	1⅞ inch	3¾ inches	5.50	10 pounds	1 gross

All Prices Listed are F. O. B. Aurora.

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strains so far studied. The drug is only partly effective in preventing attacks of vivax malaria, since erythrocytic forms appear in the blood a short time after the drug is withdrawn. Other antimalarial drugs such as chloroquine or quinacrine are said to be preferred in the treatment of vivax malaria. Chlorguanide hydrochloride is the drug of choice for the treatment of falciparum malaria.

Chlorguanide hydrochloride disappears from the plasma in about forty-eight hours after the administration of a single dose of 0.5 Gm. About one-half to one-third of the drug is excreted by the kidneys. The drug does not accumulate in the body when given in therapeutic doses.

Toxic symptoms are not observed in the usual dosage regimen, but doses of 1 Gm. or more may produce vomiting, abdominal pain and diarrhea. Excessive doses may produce transient hematuria, epithelial cells and casts in the urine. Intramuscular injection of chlorguanide hydrochloride may result in local myonecrosis and inflammatory reactions. High doses may also produce a temporary myelocytic reaction in the blood.

As with other antimalarial agents, the response of various strains of plasmodia to the drug is variable, so that the average dosage schedule which is indicated may be subject to modification in accordance with the response of the strain involved.

Dosage.—A single dose of 0.3 Gm. weekly in the suppression of falciparum and vivax malaria. For the prophylaxis of falciparum malaria, 0.1 Gm. twice a week may be given; this dose is only partially effective against vivax malaria.

A dose of 0.1 Gm. three times daily, or 0.3 Gm. daily, for ten days is usually effective in producing a cure of falciparum malaria. The same dose is usually only partially effective against vivax malaria.

Tests and Standards.—

Chlorguanide hydrochloride occurs as odorless, colorless, fine crystals or as a crystalline powder possessing a bitter taste. It is soluble in alcohol, slightly soluble in water and practically insoluble in chloroform and in ether. The *p*H of a filtered saturated solution is between 5.8 and 6.3. Chlorguanide hydrochloride melts between 248 and 252° C.

For tests and standards see *J. Am. Med. Assoc.*, 137:1532, 1948.

Abbott Laboratories, North Chicago, Ill.

Tablets Chlorguanidine Hydrochloride: 0.1 Gm. and 0.3 Gm.

Eli Lilly & Company, Indianapolis, Ind.

Tablets Guanatol Hydrochloride: 25 mg., 50 mg. and 100 mg.

DICUMAROL.—3,3′-Methylenebis(4-hydroxy coumarin).—$C_{19}H_{12}O_6$.—M. W. 336.286.

Actions and Uses.—"Dicumarol" causes a lengthening of the prothrombin time by decreasing the prothrombin concentration of the blood. Although the exact mode of action is not known, it is assumed that the drug acts on the liver to retard prothrombin production, since the circulating prothrombin present in blood is not affected *in vitro* by the addition of "dicumarol"; the effect of the drug requires twelve to twenty-four hours to develop and persists for from twenty-four to seventy-two hours after discontinuance of therapy.

"Dicumarol" may be used in the prophylaxis and treatment of intravascular clots. It may be used alone or as an adjunct to heparin in the treatment of postoperative thrombophlebitis and pulmonary embolism, acute embolic and thrombotic occlusion of peripheral arteries and recurrent idiopathic thrombophlebitis.

"Dicumarol" does not affect thrombi or emboli already present, nor does it increase the local blood supply of an area affected by an embolism. The drug can only be expected to retard further intravascular clotting and prevent propagation of the thrombus or embolus.

Since the ultimate outcome of acute coronary thrombosis is to a large extent dependent on extension of the clot and on the formation of mural thrombi in the cardiac chambers with subsequent embolization, "dicumarol" has been used as an adjunct in the treatment of this condition.

Dosage.—On the first day the prothrombin time is determined to insure that it is not abnormally high. One dose of 200 to 300 mg. is given, depending on the size and condition of the patient. On the second day the % prothrombin is determined, and a second dose of 100 to 200 mg. of the drug is given only if the prothrombin activity is more than 25%. On successive days 100 to 200 mg. is administered if prothrombin activity is more than 25%.

If prothrombin activity drops below 15%, or if signs of bleeding appear, menadione sodium bisulfite 72 mg. is given intravenously slowly. This may be given along with transfusions of fresh whole blood.

Tests and Standards.—

"Dicumarol" occurs as a white or slightly buff-colored crystalline powder. It melts in the range 287–293° C. It is soluble in aqueous alkali and in pyridine, slightly soluble in benzene and in chloroform, and practically insoluble in water, alcohol and ether.

For tests and standards see *J. Am. Med. Assoc.*, 137: 1533, 1948.

Abbott Laboratories, North Chicago, Ill.

Tablets Dicumarol: 25 mg., 50 mg. and 0.1 Gm.

The Wm. S. Merrell Company, Cincinnati

Tablets Dicumarol: 100 mg.

U. S. Trademark 398,198.

ASCORBIC ACID—U.S.P. (See New and Nonofficial Remedies 1947, p. 517).

The following dosage form has been accepted:

Cole Chemical Co., St. Louis

Tablets Ascorbic Acid: 25 mg. and 100 mg.

ESTROGENIC SUBSTANCES (WATER INSOLUBLE) (See New and Nonofficial Remedies 1947, p. 343).

The following additional dosage form has been accepted:

Endo Products, Inc., Richmond Hill, N. Y.

Aqueous Solution Estromone: 20,000 I. U. per cc., 1-cc. ampuls and 5-cc. vials. Preserved with phenol 0.5% with tri-isoprapanolamine 0.5%, in solution sodium chloride, 0.9%.

U. S. Trademark 345,724, May 4, 1937.

SYNTROPAN (See New and Nonofficial Remedies, 1947, p. 240).

The following additional dosage form has been accepted:

Hoffmann-La Roche, Inc., Nutley, N. J.

Tablets Syntropan: 100 mg.

CONTRACEPTIVE JELLIES AND CREAMS (See New and Nonofficial Remedies, 1947, p. 271).

The following additional dosage form has been accepted:

Holland-Rantos Co., Inc., N. Y.

Koromex Cream: 113-Gm. tubes.

THIAMINE HYDROCHLORIDE—U. S. P. (See New and Nonofficial Remedies 1947, p. 506).

The following dosage form has been accepted:

Kreamers-Urban Co., Milwaukee

Tablets Thiamine Hydrochloride: 3 mg. and 10 mg.

CHINIOFON—U.S.P. (See New and Nonofficial Remedies 1947, p. 186).

The following dosage forms have been accepted:

Ernst Bischoff Co., Ivorylon, Conn.

Anaydin (*Powder*): 25-Gm. and 100-Gm. bottles.

Pills Anaydin: 0.25 Gm., enteric coated with shellac and magnesium stearate.

U. S. Patent 232,215.

SODIUM TETRADECYL SULFATE.—Sodium 2-methyl-7-ethylundecyl sulfate-4.—$C_{14}H_{29}SO_4Na$.—M. W. 316.43.

Actions and Uses.—Sodium tetradecyl sulfate is an anionic surface-active agent that has been found to be useful as a wetting agent to increase the surface activity of solutions of certain externally applied antiseptics to which it may be added. It also possesses sclerosing properties useful for the obliteration of varicose veins by intravascular injection of buffered solutions in appropriate concentration. Its rather profound sclerosing action is subject to the disadvantage that injection may produce sloughing and is occasionally associated with greater frequency of leg cramps and pain than with other sclerosing agents. On the other hand, the possibilities of sensitization are considered remote and idiosyncrasies or anaphylactoid reactions that have infrequently occurred are mild and of short duration. The possibility of undiscovered toxic effects should be borne in mind, but careful clinical studies to date appear to warrant use of the compound as a reasonably safe sclerosing agent.

Sodium tetradecyl sulfate is subject to the same general contraindications as for other sclerosing agents. See preceding general statement on Sclerosing Agents.

Dosage.—Sodium tetradecyl sulfate is employed for sclerosing therapy of varicose veins in buffered solutions of 1%, 3% and 5% concentrations depending on the size of the veins (amount of hemodilution) to be obliterated. The 3% solution is considered adequate for most sites. The average amount to be injected at any one site should be from 0.5 to 1 cc. and at any one sitting, 2 to 3 cc. Not more than 6 cc. of the 5% solution or 10 cc. of the 3% solution should be injected at any one occasion. Repeated injections should be carried out at weekly intervals. The 1% concentration should be used for all small superficial varicosities to avoid possible sloughing that may occur with the use of stronger concentrations for such veins. It is further recommended that not more than 1 cc. of the 1% concentration be used as a test dose on the first injection to detect any possible idiosyncrasy. Treatment should not be instituted or continued if alarming reactions occur.

Tests and Standards.—

Sodium tetradecyl sulfate occurs as a white, waxy, odorless solid. It is soluble in water, alcohol and ether. A 5% aqueous solution is clear and colorless. The pH of a 5% solution ranges from 6.5–9.0.

For tests and standards see *J. Am. Med. Assoc.*, 137: 1129, 1948.

Wallace & Tiernan Products, Inc., Belleville, N. J.

Solution Sodium Sotradecol with Benzyl Alcohol 2%: 1, 3 and 5% solution, 20-cc. vials.

U. S. Trademark registered.

SODIUM PARA-AMINOBENZOATE.—The sodium salt of para-aminobenzoic acid.—$NaC_7H_6O_2N$.—M. W. 159.12. Sodium para-aminobenzoate, when dried at 110° C. for three hours, contains not less than 98% of $NaC_7H_6O_2N$.

Actions and Uses.—Sodium para-aminobenzoate has been found to exert a depressant action on the metabolism of rickettsiae that is useful for the management of certain rickettsial diseases. It is reported to be of value in the treatment of Rocky Mountain spotted fever, epidemic and endemic (murine) typhus and tsutsugamushi disease (scrub typhus). It has not proved uniformly successful in the treatment of all rickettsial infections, so its ultimate value against other forms of typhus or rickettsial diseases remains to be determined. Its use as a prophylactic is not recommended until more is known of its long-term toxic effects in man and its ultimate protective value when administered routinely to persons in endemic areas.

Sodium para-aminobenzoate should not be administered in conjunction with the sulfonamide drugs because of the well-known inhibitory effect of para-aminobenzoic acid on the antibacterial effect of these agents. It is not antagonistic to penicillin.

Dosage.—Sodium para-aminobenzoate is administered orally in tablet form. The recommended average adult initial therapeutic dose is 4 to 6 Gm.; this may be followed by doses of 2 to 3 Gm. every two hours. Within the first twenty-four hours of therapy with para-aminobenzoic acid in rickettsial diseases, concentrations of 30 to 40 mg. per hundred

cubic centimeters of the drug should be obtained and then maintained in the blood of the patient. If definite improvement is not noted within forty-eight hours, increase the dose of the drug to a point which will produce a concentration of 40 to 50 mg. of para-aminobenzoic acid in the blood of the patient. Levels above 60 mg. may be dangerous, because para-aminobenzoic acid is not a completely innocuous agent but may produce hepatic and renal lesions. Blood levels range 30 to 60 mg. per hundred cubic centimeters, but since this seems to be more a function of the urinary output than of the dosage, this is usually limited to 500 cc. per day by restriction of fluid intake. Until more is known concerning the possible toxicity of the drug in man the administration of a daily dosage in excess of 30 Gm. for a period of more than one week is not recommended.

Tests and Standards.—

Sodium para-aminobenzoate occurs as a white to a buff-colored, odorless, crystalline powder, possessing a saline taste. It is freely soluble in water, slightly soluble in alcohol, very slightly soluble in benzene and chloroform and practically insoluble in ether. An aqueous solution is alkaline to litmus paper. For tests and standards see *J. Am. Med. Assoc.*, 137: 1130, 1948.

International Vitamin Division, Ives-Cameron Co., Inc., New York

Tablets Sodium Paba: 50 mg.

Wyeth, Inc., Philadelphia, Pa.

Tablets Sodium Paba: 0.5 Gm.

U. S. Patent 2,403,473.

ESTROGENIC SUBSTANCES (WATER INSOLUBLE) (See New and Nonofficial Remedies, 1947, p. 343).

The following dosage form has been accepted:

Reed & Carnrick, Jersey City, N. J.

Solution of Estrogenic Substances in Oil: 1-cc. ampuls and 4-cc., 10-cc. and 25-cc. vials available as 2000 international units per cc., 6000 international units per cc., 10,000 international units per cc. and 25,000 international units per cc. in peanut oil. Preserved with chlorobutanol 0.5%.

Tablets Estrogenic Substances: 1000 international units and 5000 international units.

Lincoln Laboratories, Decatur, Ill.

Solution of Estrogenic Substances in Oil with Benzyl Alcohol 2%: 1-cc. ampuls and 15-cc. vials available as 5000 international units per cc., 10,000 international units per cc. and 20,000 international units per cc. in sesame oil. Preserved with chlorobutanol 0.5%.

Carroll Dunham Smith Pharmacal Company, New Brunswick, N. J.

Aqueous Suspension Estrusol: 1-cc. dual syringe cartridges available as 20,000 international units per cubic centimeter. Each cc. contains isotonic sodium chloride suspension of estrogenic substances, principally estrone, with small amounts of other natural estrogens. Preserved with chlorobutanol 0.5%.

STREPTOMYCIN (See New and Nonofficial Remedies, 1947, p. 150).

The following additional dosage forms have been accepted:

Merck & Co., Inc., Rahway, N. J.

Streptomycin Calcium Chloride Complex: 50-cc. vials containing streptomycin calcium chloride complex equivalent in activity to 5 Gm. of streptomycin base.

Chas. Pfizer & Co., Inc., Brooklyn

Streptomycin Sulfate: Bulk.

PENICILLIN (See New and Nonofficial Remedies, 1947, p. 144).

The following additional dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Tablets Penicillin Calcium: 100,000 units with sodium citrate 1 Gm. as a buffer.

Dulcet Tablets Crystalline Penicillin G Potassium Buffered: 50,000 units with calcium carbonate 0.25 Gm. as a buffer.

U. S. trademark 301,66.

Chas. Pfizer & Co., Brooklyn

Crystalline Penicillin G Sodium: 1,000,000-unit vials.

MENADIONE SODIUM BISULFITE (See New and Nonofficial Remedies, 1947, p. 534).

The following dosage from has been accepted:

Abbott Laboratories, North Chicago, Ill.

Solution Hykinone: 72-mg., 10-cc. ampuls. Each 10 cc. contains menadione U. S. P. 72 mg. and sodium bisulfite 27.5 mg. in an aqueous solution made isotonic with sodium chloride.

U. S. Patent 2,367,302, U. S. Trademark 383,789.

FUNGUS EXTRACTS (See New and Nonofficial Remedies 1947, p. 9).

The following dosage form has been accepted:

Arlington Chemical Company, Yonkers, N. Y.

Fungus Allergens: These preparations are marketed in vials containing 50 mg. of the dried fungi. In addition the items to follow are marketed as extracts for hyposensitization in 3-, 5- and 10-cc. vials at concentrations 1:20, 1:33, 1:100, 1:500, 1:1000, 1:5000, and 1:10,000. Treatment sets of five 3-cc. vials with one vial at each of the following concentrations 1:10,000, 1:5000, 1:1000, 1:500, 1:100 are also offered.

Extracts marketed in dry form, and in solution form:

Achorion schoenleinii; Alternaria sp.; Aspergillus flavus; Aspergillus fumigatus; Aspergillus glaucus; Aspergillus nidulans; Aspergillus niger; Cephalosporium; Cephalothecium; Chaetomium sp.; Cladosporium; Epidermophyton inguinale; Fusarium; Helminthosporium; Hormodendrum; Microsporum lanosum; Monilia albicans; Monilia sitophila; Mucor plumbeus; Penicillium camemberti; Penicillium chrysogenum; Penicillium digitatum; Penicillium notatum, Penicillium roqueforti; Rhizopus; Trichoderma; Trichophyton gypseum, and Trichophyton interdigitale.

In addition the following stock fungus mixtures are offered in solution form only:

Aspergillus mixture—containing equal parts of A. flavus, A. fumigatus, A. glacus, A. nidulans, A. niger.

Penicillium mixture—containing equal parts of P. camemberti, P. chrysogenum, P. digitatum, P. notatum, P. roqueforti.

Trichophyton mixture—containing equal parts of T. gypseum, T. interdigitale and *Epidermophyton inguinale.*

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NARAKON* NASAL SOLUTION

. . . particularly noteworthy for its dual form, permits a desirable flexibility for individualizing local nasal therapy. **NARAKON*** Plain (without vasoconstrictor) provides soothing, reaction-free relief in many cases of rhinitis medicamentosa, chronic sinusitis and rhinitis, and in the numerous instances where ephedrine is contraindicated. **NARAKON*** with dl-Desoxyephedrine 1% is quickly and safely efficacious where prompt nasal decongestion is desired. Both forms supplied in 1 fl.oz. bottles with dropper assembly.

LORAKON* COLLUTORY

. . . the remarkable new mouthwash, spray and gargle (in the distinctive, handsome package) which doctors and dentists have found so effective, yet so soothing and pleasant-tasting for home and office use. It is rapidly bactericidal and fungicidal and effectively detergent, and also emollient and non-irritating — with a pleasing aromatic fragrance. Available in 8 fl.oz. and pint bottles.

Since their introduction but a few months ago, **NARAKON*** Nasal Solution (in 2 forms), and **LORAKON*** Collutory have been heartily welcomed by physicians and dentists (and their patients) everywhere. Why not check your stocks on these items today — so that you will be amply supplied to capitalize on the rich "veins" of Baybank's nation-wide "prospecting" campaign during the approaching "colds" season.

*Trade-mark

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Fungus Allergens-Arlington are made according to a standard method, viz., grown in a peptone-cerelose-yeast extract medium, collected by filtration, washed with acetone, and ether and dried.

Fungus Allergen Extracts-Arlington are prepared as follows: (directions for preparation of 1000 cc. of extract 1:20 concentration).

Fifty grams of dried fungus material are suspended in 800 cc. of *N*/20 sodium hydroxide, and the suspension is placed on the shaking machine for four hours. The suspension is centrifuged and decanted, and the residue is exhausted by successive extractions with *N*/20 sodium hydroxide until the total volume of the *N*/20 sodium hydroxide fractions equals 850 cc. Ethyl alcohol (95%) is added to the extract to yield a 14% alcoholic solution, and the extract is filtered through paper pulp until clear. The reaction of the solution is adjusted to *p*H 8.3 by the addition of either hydrochloric acid or sodium hydroxide. Tricresol in the proportion of 0.4% is added, and the solution sterilized by filtration through a Berkefeld filter. The finished products are placed on sterility tests, and mouse test according to the methods required by the U. S. Public Health Service.

From this 1:20 extract, necessary dilutions are prepared aseptically with a diluent of sterile phosphate buffer containing 14% alcohol by volume and 0.4% tricresol. The intermediate and finish products are tested for sterility according to the methods required by the U. S. Public Health Service.

TRIMETHADIONE (See New and Nonofficial Remedies, 1947, p. 401).

The following additional dosage forms have been accepted:

Abbott Laboratories, North Chicago, Ill.

Dulcet Tablets Tridione: 0.15 Gm.

U. S. trademark 301,662.

Solution Tridione: 500-cc. and 4000-cc. bottles.

●

RECOGNITION OF GENERIC NAMES

In pursuance of its policy requesting the use of generic or unprotected names for products accepted for inclusion in New and Nonofficial Remedies under protected names, the Council asks the interested firms for suggestions, which are considered by the Council's Committee on Nomenclature and from which are chosen terms eligible for recognition. Recently the Council voted to recognize the following generic terms:

Bismuth Arsphenamine Sulfonate for Bismarsen-Abbott Laboratories.

Acetypyrogall for Lenigallol—Bilhuber-Knoll Corporation.

Diallylbarbituric Acid for Dial—Ciba Pharmaceutical Products, Inc.

Iodinated Castor Oil for Riodine—Gallia Laboratories.

Phenylpropylmethylamine for Vonedrine—The Wm. S. Merrell Company.

Betethamine for Monocaine—Novocol Chemical Mfg. Co., Inc.

Sodium Bismuth Thioglycollate for Thio-Bismol—Parke, Davis & Company.

Methenamine Tetraiodide for Siomine—Pitman Moore Company.

Allyl Barbituric Acid for Sandoptal—Sandoz Chemical Works.

Psyllium Hydrophylic Mucciloid for Metamucil—G. D. Searle & Company.

Additional generic names will be published as soon as the Council has considered them.

The Wm. S. Merrell Company requested the Council's recognition of the proprietary name Diocyl Hydrochloride and the generic designation **Dicyclomine Hydrochloride** for β-diethylaminoethyl-1-cyclohexylcyclobexane-carboxylate.

On the basis of the information submitted by the firm, the Council voted to recognize the stated names as protected and generic terms, respectively, for this compound.

●

DIHYDROXY ALUMINUM AMINOACETATE —GENERIC TERM FOR "ALGLYN," "ALMINATE" AND "ASPOGEN"

Under the protective names "alglyn," "alminate" and "aspogen," Brayten Pharmaceutical Company, Bristol Laboratories, Inc., and Eaton Laboratories, Inc., respectively, submitted for the Council's consideration a basic aluminum salt of glycine containing small amounts of aluminum hydroxide and glycine. The agent is designed for use as a gastric antacid. The Council has recognized the name dihydroxy aluminum aminoacetate as a generic designation for this compound.

Boards and Colleges

. . . . . from p. 671

professional and scientific schools on the same university campus.

In preparation for the fiftieth anniversary of the American Association of Colleges of Pharmacy which will be celebrated in 1950, President Uhl urged the Association to give thought to an adequate program to commemorate this event. He also pointed out that the time has arrived for the Association to establish a permanent secretarial office and to appoint a full-time executive secretary.

The Association elected the following officers for the ensuing year: President, J. Lester Hayman, University of West Virginia; President-elect, Bernard V. Christensen, Ohio State University; Vice-President, J. Allen Reese, University of Kansas; Secretary-Treasurer, Louis C. Zopf, University of Iowa; Chairman, Executive Committee, Joseph Burt, University of Nebraska.

Typical Days

FROM THE SECRETARY'S SEPTEMBER DIARY

1st Today came Harvey Mack and Harold Hutchison of the Mack Printing Company to discuss publication contracts and it appears that printing costs run only in one direction—up. In the afternoon with Harold Darnell to discuss FDA rulings on the prescription legend with Deputy Commissioner Crawford.

2nd Busy at the Council minutes and many a telephone call from distant spots. Discussing the next step in uniform state pharmacy law procedure with Bob Swain at long distance and deciding to hold another meeting of the subcommittee of the Drug Trade Conference which has this matter in charge.

4th Another week end of quiet toil interspersed with a luncheon conference at the Statler with George Beal, Paul Briggs, Frank Taylor, Bob Swain, DuMez and E. C. Elliott, who were busy screening the Survey recommendations. In the evening at dinner with Beal and DuMez discussing A. PH. A. problems. Much of tomorrow and Labor Day to be spent with the dictaphone and several piles of accumulated correspondence.

7th All morning working on the printing contracts for N. F. IX and in the afternoon busy with staff problems relating to hospital pharmacy. With the hospital construction program and the recommendations of the National Health Assembly, it looks as if hospital pharmacy would soon become a major factor in pharmacy's long range program.

8th Conferring with possible editors of THIS JOURNAL to replace Glenn Sonnedecker. And later with American Hospital Associations' Dr. Dolezal on the next Pharmacy Institute and then to a late dinner with Powers, Green, Nowell and Darnell at the Occidental at which Glenn Sonnedecker, our departing editor, was the guest of honor.

9th All of today at the desk dealing with miscellaneous problems running all the way from selecting a new caretaker for the Hugh Mercer Apothecary Shop at Fredericksburg to pharmacy's proper part in state programs for indigent medical care, and the long distance calls coming in continuously to interrupt the even tenor.

10th All this day reviewing program and plans for the House of Delegates with Chairman Bert Mull, who came from Indianapolis to get "House" business off to a good start. Also reviewing plans for National Pharmacy Week and supplying information to those who are planning the Maryland Pharmaceutical Association's Kelly Memorial.

11th To Philadelphia on an early train for a meeting with the special U. S. P. Committee on Flavoring Agents at the Benjamin Franklin Hotel. Here were E. F. Cook, Lynn, Lee, Youngken, Dugan, Burt, Langenhan and others. All discussing syrups, elixirs, flavoring oils and other agents which might be recommended to the Committee on Scope to take the bitterness out of drugs for all and sundry. And now to Red Bank for the week end.

13th A blue Monday indeed with many things going wrong. Now off to the Statler Hotel for a meeting of the Council of the A. A. A. S. which begins its centennial convention today.

14th A final review of JOURNAL details with Harold Darnell and Glenn Sonnedecker as the latter starts on his way to the University of Wisconsin for graduate study.

15th This morning taking part in a symposium on "World Health Problems" as part of the program of the centennial meeting of the A. A. A. S. Dr. Thomas Parran presided over this symposium with his usual dignity and skill. Papers by Faust, Scheele and Warren were discussed by Sawyer, Soper, and this writer, who spoke on international drug standards. Later to lunch at the Cosmos Club with Pan American Sanitary Bureau's F. L. Soper and Statistician L. I. Dublin discussing Pan-American affairs and especially the coming congress on pharmacy.

16th A luncheon conference with Leslie Falk and Eleanor Poland on drug problems connected with group clinics and later discussing a proposed hospital pharmacy survey with Alex Milne, of the U. S. Public Health Service. Working on the election bulletin to go out with the ballots to the membership and interviewing candidates for the job about to be vacated by Franklin Deibert, who has been called to active duty from Reserve Officer status in the U. S. Army.

17th Much time spent with electricians and building repairmen in preparation for essential

precautions for the expanding uses of our building. At odd moments conferring with special writers for national magazines who continue to pop in for help on articles dealing with barbiturates and other interesting stories on drugs.

19th After a Saturday at the office, which did not prove to be without its long-distance telephoning, including word from Kenneth Attwood in Jacksonville, Fla., that the week of April 24, 1949, would be most suitable for the next convention, spent most of Sunday enroute to Boston. Now at the Statler Hotel overnight and then early on Monday to Portsmouth, New Hampshire, where met by Bob Morrison of Cook, Everett and Pennell.

20th After a pleasant motor trip to York Harbor, Me., at lunch with President Merrill Hay and other officers of the Maine Pharmaceutical Association before addressing this fine group at the afternoon session of their annual convention. And now at 4 p. m. with Arthur Perron at the wheel off on a rush trip through the Maine, New Hampshire and Massachusetts countryside to Boston, in time to board the six o'clock train for New York and glad to get to bed at the Pennsylvania Hotel by midnight.

21st Following telephone conferences with Swain, Schaefer, Little and Rowe on many matters of A. PH. A. business, a profitable hour spent with the JOURNAL artists and make-up advisers and then by rail to Atlantic City for the convention of the American Hospital Association. Much pleased with the hospital pharmacy exhibit presided over by Miss Niemeyer and New Jersey and Philadelphia members of the American Society of Hospital Pharmacists.

22nd All morning viewing the facilities of Atlantic City hotels in preparation for our 1950 convention and then once more to the meetings of the American Hospital Association leaving the "world's playground" in time to reach Washington to review the mail.

23rd A pleasant luncheon conference with Admiral Anderson, now in charge of manpower for the National Security Resources Board, and found him keenly interested in our program for developing the directory of pharmacists. In the evening to dine with George Archambault and to discuss the problems of the Public Health Service pharmacists.

24th Now working with Dr. Green and members of the Science Service staff on a kit for science students calculated to arouse their interest in what goes on behind the prescription counter. In the afternoon the telephone wires were hot between

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*New designation of Aminoids adopted as a condition of acceptance by the Council on Pharmacy and Chemistry of the American Medical Association.

Arlington
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New York and Washington while settling the next Pharmacy Week program and then on the "Capitol Limited" to Chicago, meeting Dr. Cushing of the Veterans Administration on the way.

25th All the forenoon in conference with the Committee on Coordination of Medical Activities at A. M. A. headquarters, sharing the responsibility of presenting pharmacy's problems and viewpoints with Earl Serles and Pat Costello. After lunch, a conference with Maurice Goldenblatt who is highly interested in cancer and heart disease research, and now returning with Pat Costello by rail to Washington with Charles Walgreen, also Washington bound, joining us at dinner.

27th Yesterday and today spent with the Advisory Committee on the Pharmaceutical Survey reviewing the final report and results of fact finding. A tragic interlude in these strenuous debates and final conferences occasioned by the illness and sudden death of an esteemed and highly competent co-worker, Andrew G. DuMez.

29th Two busy days working out details of coordinating American Society of Hospital Pharmacy and Hospital Pharmacy Division activities with the officers of the A. S. H. P. who came to Washington for that purpose yesterday. Purdum, Cathcart and Sister Jeanne Marie make a splendid team. Much of this day devoted to the preliminaries of the program developing with the American Heart Association; Messrs. Arkus and Aken furnishing suggestions from that Association and Harold Darnell working with us to evolve a practical program of cooperation with the states.

30th A sad day in the annals of American pharmacy as Dean DuMez is laid to rest from earthly labors, with prominent pharmacists from far and wide paying their respects.

PHARMACOPOEIAL HEADQUARTERS

In conformity with the instruction and authority of the 1950 Pharmacopoeial Convention, as confirmed and embodied in the new By-Laws adopted at the adjourned meeting of the Convention in Cleveland in 1942, the Board of Trustees have selected permanent U. S. P. Headquarters. The building is located at 46 Park Avenue, New York City, and at a suitable time it will be dedicated for use as the Headquarters and Administration Office of the Pharmacopœia of the United States.

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Upjohn is privileged to announce the newest in the series of giant strides in penicillin therapy—DEPO-PENICILLIN—96-hour therapeutically effective blood levels made possible with a single injection of Upjohn's uniquely prepared Crystalline Procaine Penicillin G suspended in Peanut Oil containing 2% W/V Aluminum Monostearate. The Upjohn process of suspending smaller than micra particles of Crystalline Procaine Penicillin G in Peanut Oil gelled with a dispersing agent also affords a free-flowing preparation which may be kept at room temperature and administered intramuscularly with syringe and needle which do not have to be free from moisture. DEPO-PENICILLIN is recommended for use in all those conditions in which other forms of repository penicillin have been indicated.

*Trademark

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KALAMAZOO 99, MICHIGAN

New A. Ph. A. Members

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

ARKANSAS

Bennett, Victor M., Clarksville

CALIFORNIA

Abrahamson, Myrtle F., Richmond
Badger, Harry, Los Angeles
Baird, Charles, Redwood City
Baker, Glenn S., San Francisco
Baum, Leo, Oakland
Bonham, L. Leonard, San Diego
Clifford, Robert W., Menlo Park
Costiga, Al, San Carlos
Davis, Clyde, Oakland
Evans, C. K., Salinas
Favilla, Cora M., San Francisco
Findlay, Colin L., Lafayette
Finney, Frank R., San Pablo
Forsyth, T. R., Redwood City
Fuller, Wayland C., San Francisco
Germone, Roy L., San Francisco
Green, Karl, Berkeley
Gross, Emile A., San Francisco
Guilbert, Amy N., Chula Vista
Jackson, Arthur E., Oakland
Jorgensen, Paul S., Millbrae
Keller, Browning E., Los Angeles
Khlentzos, Michael T., San Francisco
Lear, Arthur K., Fairfax
Liebman, Simon S., San Francisco
Marsh, William, San Bernardino
McClarty, Hamilton, San Francisco
Metcalfe, C. Wendy, San Carlos
Meyer, Fred H., Los Angeles
Montiel, Henry, Redwood City
Mortus, Charles S., Redwood City
Nakamura, Shiro, Los Angeles
O'Neill, William, Jr., Berkeley
Oneto, John F., San Francisco
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ASSOCIATIONS

Bergen County (N. J.) Pharmaceutical Association is working with the telephone company's classified advertisement writers to change wording in pharmaceutical advertisements which is believed to reflect unfavorably on the profession in general. Such phrases as "fresh drugs accurately compounded," "only registered pharmacists," etc., will be deleted from pharmacists' advertisements if the Association's plans are carried out.

A movement urging pharmacists to get acquainted with potential legislators is backed by the **Idaho and Ohio State Pharmaceutical Associations.** Suggestions for pertinent questions to ask and important subjects for discussion are provided to members by these two state organizations.

The **Arthritis and Rheumatism Foundation** is starting a six-month editorial campaign designed to inform the public how arthritis and other rheumatic ills may be avoided, and what to do about them if stricken.

PHARMACEUTICAL MANUFACTURERS

Expansion of **Sharp & Dohme's** export activities includes the establishment of two new subsidiaries in Cuba and the Philippine Islands. No manufacturing will be done at these new centers at the present time, but they will be used as distribution points for finished products.

Smith, Kline & French Laboratories announce the appointment of Dr. S. David Bailey as head of the physical chemistry section of the Research Laboratories. Dr. Bailey was formerly with the Iowa State Teachers College at Cedar Falls.

Germantown, Pa., is the site of the **National Drug Company's** new research laboratory which will be operated under the direction of Dr. Gustav J. Martin, research director. The laboratory is equipped to carry out any phase of medical research, and has a staff of scientists and technicians which has already made a number of important contributions in the fields of medicine and chemistry.

AT RANDOM

Joseph Hirsh, acting director of the **Research Council on Problems of Alcohol,** announces a third grant this year for research in this field has been made available to the Chicago Committee on Alcoholism to be used by one of the leading institutions in that city.

Up to 15 minutes' time can be saved by physicians in clinical determination of increased capillary fragility through use of a new instrument known as a **Petechiometer,** developed by Rexall Drug Co.

Hornell Hart, professor of sociology at Duke University, receives the Edward L. Bernays Atomic Energy Award for action-related research in the social implications of atomic energy. The award was made at the annual convention of the American Psychological Association on behalf of its division, the Society for the Psychological Study of Social Issues.

Federal grants to promote training of medical students in mental aspects of disease are being made available to undergraduates by the **Public Health Service** of the Federal Security Agency. Formerly grants to medical schools, authorized by the National Mental Health Act, were utilized primarily for graduate training in psychiatry.

Funds totaling $25,000 for production of an educational film on **cerebral palsy,** will be raised by the National Association of American Business Clubs within the next four months, F. H. Bachman, Champaign, Ill., president of the organization, reports. The film, which will be produced by National Society for Crippled Children and Adults, will be available to all interested persons and groups. National Society is the only national agency operating a program of treatment and rehabilitation of the country's one-half million cerebral palsied persons.

Thousands of veterans who contracted **malaria** overseas during World War II have been cured, Veterans Administration has announced. Within the next few years, the problem of relapse from war-acquired malaria will be an insignificant one, VA added. The rate of cures is indicated by VA statistics. During June, 1947, approximately 130,000 veterans were receiving compensation for malaria incurred in service. Nine months later, in March, 1948, this number had dropped to 32,000. It is still declining.

COLLEGES

The **Medical College of Virginia School of Pharmacy** reports the largest enrollment in its history this year. Of the total of 1119 students enrolled in the college, 214 are registered in the School of Pharmacy and 59 of these are freshmen.

Dr. J. B. Sprowls, Jr., formerly of the University of Buffalo School of Pharmacy, is now with **Temple University School of Pharmacy** as head of the Department of Pharmacy.

Dr. Nathan Levin of Mount Vernon, N. Y., leaves Burroughs Wellcome and Co., Inc., to accept the position of associate professor and head of the Department of Pharmaceutical Chemistry, **College of Pharmacy at Howard University** in Washington, D. C.

The **Department of Pharmacy of Howard College** (Birmingham, Ala.) reports that the committee on admissions could accept only 40 of the 85 applicants taking the aptitude tests this fall for admission. With existing facilities, this number was considered the maximum to insure adequate instruction.

Dean Roy A. Bowers of the **University of New Mexico College of Pharmacy** reports that complete occupancy of a new $100,000 building is scheduled for the fall semester. It will contain 8200 square feet of floor area.

The 1948–49 session at the **Philadelphia College of Pharmacy and Science** was inaugurated on September 15 at the reception assembly for freshman students. Dr. Ivor Griffith presided at the meeting, and introduced other members of the faculty. The total enrollment at the Philadelphia College this year represents the greatest number of students ever to be accommodated in the present quarters in West Philadelphia.

VA POSITIONS OPEN

A few vacancies exist for qualified pharmacists in Veterans Administration hospitals and regional offices in all parts of the country, E. Burns Geiger, chief of VA's pharmacy division, has announced.

Basic minimum qualifications for VA pharmacists are a baccalaureate degree, with a major in pharmacy, from an accredited college of pharmacy, and registration as a pharmacist in one of the states or in the District of Columbia.

Applicants will be placed in one of three pay brackets, depending upon their education and experience. Applications (Civil Service Forms 57) may be obtained from any Post Office, Civil Service office or VA personnel office. The forms should be forwarded to the hospital or regional office in which applicants wish to serve, or to the VA branch office having jurisdiction over the VA stations.

MONTHLY DRUG INDEX

Bacitracin 688
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ADVERTISING INDEX

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Depo Penicillin (The Upjohn Co.) 700
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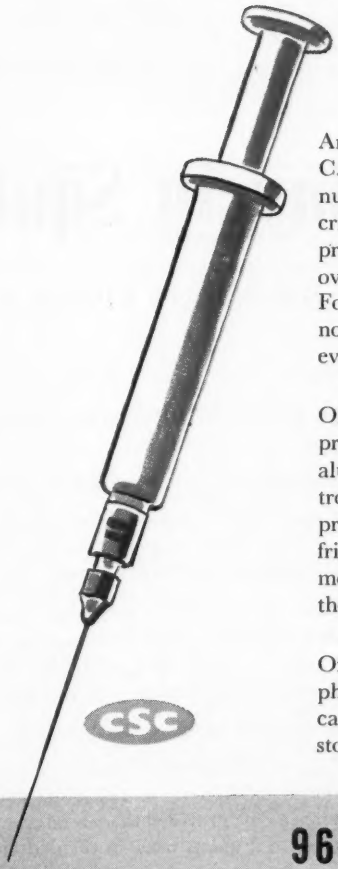
Thephorin Ointment (Hoffmann-LaRoche) 641
Torsion Balance Co. 649
Trasentine (Ciba Pharmaceutical Products, Inc.) ..... inside back

A Single Injection Every Other Day



Antibiotic therapy is greatly simplified when C.S.C. Crystalline Procaine Penicillin G in Peanut Oil with aluminum monostearate is prescribed. A single 1 cc. injection (300,000 units) produces therapeutic blood levels for 96 hours in over 90% of patients, *and for 48 hours in all patients.* For certainty of therapy, this preparation need not be given, as a rule, more often than once every other day.

Crystalline Procaine Penicillin G in Peanut Oil-C.S.C. contains 300,000 units of micronized procaine penicillin per cc., together with 2% aluminum monostearate for producing a thixotropic suspension. This outstanding penicillin preparation is free flowing and requires no refrigeration. It is indicated in the treatment of most infectious diseases amenable to penicillin therapy.

Crystalline Procaine Penicillin G in Peanut Oil-C.S.C. is being widely publicized to all physicians in the United States. Your wholesaler can supply you; in economical 10 cc. size rubber-stoppered vials containing 300,000 units per cc.

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Dihydrostreptomycin Squibb
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PERMITS HIGHER DOSAGE FOR MORE PROLONGED PERIODS

WHAT IS IT?

A potent antibiotic compound derived from streptomycin by reduction with hydrogen.

WHEN IS IT INDICATED?

Like streptomycin, as an adjunct to other measures in tuberculosis.

HOW DOES IT ACT?

The antibacterial activity of Dihydrostreptomycin usually parallels that of streptomycin in tuberculosis. Resistant strains of organisms appear to develop as rapidly as with streptomycin.

WHAT ARE ITS ADVANTAGES?

Dihydrostreptomycin is significantly less neurotoxic than streptomycin and hence can be given in larger doses and for more prolonged periods. In addition, patients showing allergic reactions to streptomycin have been able to continue with the dihydro form.

HOW IS IT ADMINISTERED?

Only intramuscularly, pending further clinical studies.

WHAT IS THE DOSAGE?

Daily doses of 2 grams of Dihydrostreptomycin Squibb may be given safely for periods equal to those in which streptomycin has been restricted to 1 gram a day, provided there is no renal dysfunction. Average dosage—1 to 2 grams daily in divided doses every 12 hours.

HOW SUPPLIED?

20 cc. vials containing the equivalent of 1 Gm. streptomycin base
50 cc. vials containing the equivalent of 5 Gm. streptomycin base

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the pharmacist gains—he receives more *new* and *renew* calls for ABDOL with Vitamin C at a liberal margin.

Like all Parke-Davis products, ABDOL with Vitamin C is professionally promoted and distributed. It is "as good pharmacy to stock and dispense Parke-Davis preparations as it is good medicine to prescribe them".

ABDOL with Vitamin C, Multiple Vitamin Capsules provide in each capsule	
Vitamin A	10,000 Units (2½ M.D.R.)
Vitamin D	1000 Units (2½ M.D.R.)
Vitamin B_1 (Thiamine Hydrochloride)	2.5 mg. (2½ M.D.R.)
Vitamin B_2 (G) (Riboflavin)	2.5 mg. (1¼ M.D.R.)
Vitamin C (Ascorbic Acid)	50 mg. (1⅔ M.D.R.)
Vitamin B_6 (Pyridoxine Hydrochloride)	0.5 mg.
Nicotinamide (Niacinamide)	20 mg.
Pantothenic Acid (as the Calcium Salt)	5.0 mg.

M.D.R. = Minimum daily requirement for adults.

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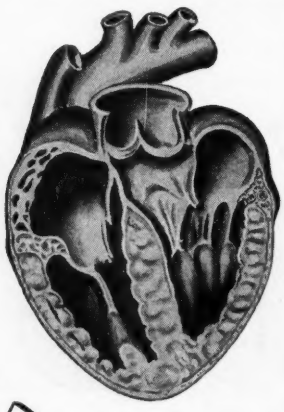

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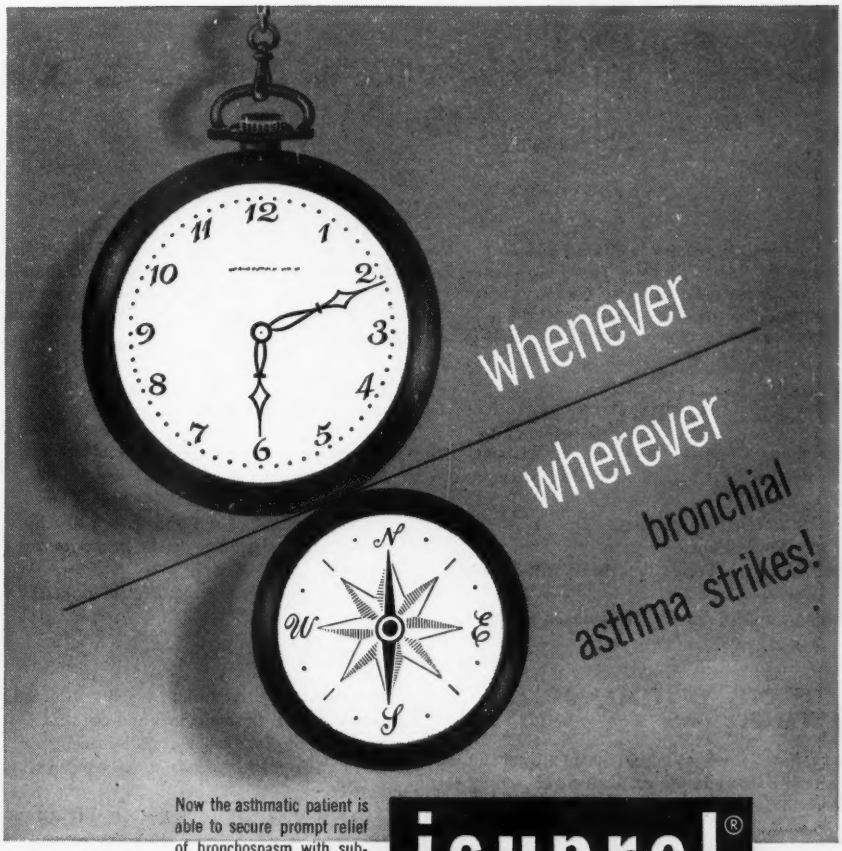

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New prescription products

Product descriptions may be clipped and filed on three- by five-inch cards. These are also indexed for quick reference in the "Monthly Drug Index" appearing on the last page of each issue. A product is described in this column for the information of pharmacists who may be asked by physicians to stock the drug, or who may receive professional inquiries about it. A listing does not imply evaluation or recommendation by the Association, nor does omission of any product have significance concerning its merit.

BACIGUENT OINTMENT

Description: Contains 500 units of bacitracin per Gm. suspended in a base designed to preserve stability.

Form Supplied: 1/2-oz. tubes.

Action: Topical anti-infective.

Administration: Topically with or without bandage.

Source: The Upjohn Co., Kalamazoo 99, Mich.

BACIGUENT, OPHTHALMIC OINTMENT

Description: An ophthalmic ointment containing 500 units of bacitracin per gram suspended in a base designed to preserve the bacitracin and facilitate rapid spreading at the temperature of the eye.

Form Supplied: 1-dram tubes.

Action: Topical anti-infective for superficial infections of the eye. For deep infections of the eye, systemic antibiotic therapy should supplement local application.

Administration: Topically.

Source: The Upjohn Co., Kalamazoo 99, Mich.

BACITRACIN, TOPICAL

Description: A sterile powder for preparation of solutions for wet dressings, irrigations and local instillations.

Form Supplied: In sterile vials containing 2000, 10,000 and 50,000 units.

Action: Topical anti-infective.

Administration: Bacitracin solutions should be prepared by adding sterile physiological salt solution in amount sufficient to provide 500 units per cc. for wet dressings, irrigations and local injection.

Source: The Upjohn Co., Kalamazoo 99, Mich.

BRUCELLERGEN

Description: Brucella protein nucleate.

Form Supplied: 1-cc. vials (10 tests).

Action: Diagnostic agent for brucellosis.

Administration: The test is performed by injecting 0.1 cc. intradermally on the flexor surface of the forearm.

Source: Sharp & Dohme, Philadelphia 1.

BRUCELLIN ANTIGEN

Description: A bacterial vaccine obtained from *Brucella abortus, Br. melitensis* and *Br. suis.*

Form Supplied: Vials containing 2 cc.

Action: Proposed for use in the treatment of undulant fever.

Administration: Subcutaneously or intramuscularly.

Source: Sharp & Dohme, Philadelphia 1.

CHOLINE DIHYDROGEN CITRATE

Description: Dihydrogen citrate salt of choline (trimethyl hydroxyethyl ammonium hydroxide).

Form Supplied: Tablets containing 0.65 Gm. of choline dihydrogen citrate in bottles of 100.

Action: Affects transport and utilization of fat, due to choline content.

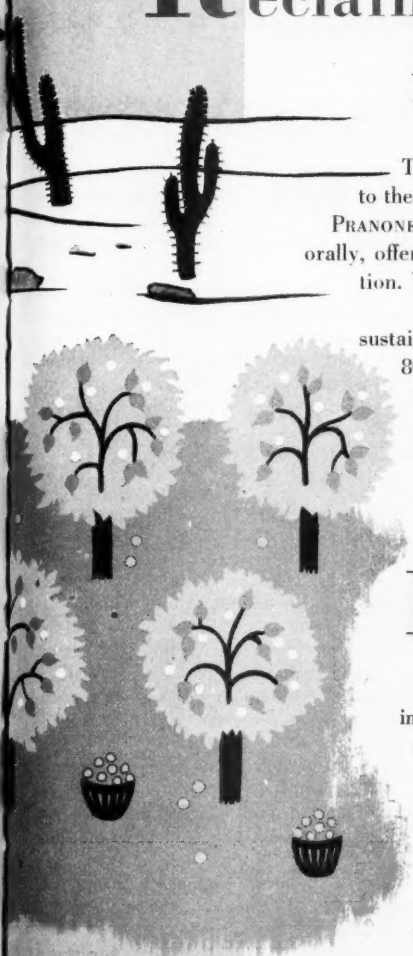
Administration: Orally as indicated for trial in certain hepatic disorders, in conjunction with other recognized forms of therapy.

Source: Abbott Laboratories, North Chicago, Ill.

DELVINAL-DIETHYLSTILBESTROL TABLETS

Description: Tablets each containing sodium vinbarbital, 32 mg. and diethylstilbestrol, 0.1 mg.

Reclaiming Nature's failures



The physician may now offer encouragement to the patient with a history of *habitual abortion.* PRANONE* Tablets, supplying corpus luteum activity orally, offer hope for a high degree of fetal conservation. With the help of PRANONE, which enhances formation of a secretory endometrium and sustains the embryo against premature expulsion, 80 per cent of patients have been brought to term.[1-3] Indeed, the corpus luteum hormone has been so successful in correcting "relative" sterility due to abortion that Mazer and Israel[4] describe it as having "unimpeachable value and total harmlessness."

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Action: Sedative and estrogenic therapy in the treatment of the menopausal syndrome.

Administration: Orally, from one to six tablets per day, as indicated.

Source: Sharp & Dohme, Philadelphia 1.

ESKADIAMER

Description: Contains sulfadiazine and sulfamerazine.

Form Supplied: An aqueous suspension of equal parts of sulfadiazine and sulfamerazine (0.25 Gm. each per 5 cc.), both in microcrystalline form, supplied in 12-fl. oz. bottles.

Action: Systemic anti-infective (for infections susceptible to sulfonamides).

Administration: Orally, as indicated.

Source: Smith, Kline & French Laboratories, Philadelphia 5.

MORUSUL

Description: Sodium morrhuate 5% and sodium sulfadiazine 10%.

Form Supplied: 25-cc. multiple dose vial.

Action: Sclerosing agent for the treatment of varicose veins.

Administration: For injection as indicated.

Source: Endo Products, Inc., Richmond Hill 18, N. Y.

PENTAQUINE PHOSPHATE

Description: The phosphate form of pentaquine-(SN 13,276); chemically 6-methoxy-8-(5-isopropylaminoamylamino)-quinoline.

Form Supplied: Tablets representing 10 mg. of pentaquine base (containing 13.3 mg. of pentaquine phosphate) in bottles of 50 and 1000.

Action: Antimalarial; is said to be intended primarily for use in combination with quinine for vivax malaria. Pentaquine should not be administered to patients showing renal damage. It should not be given concurrently with sulfonamides or any antimalarial drug other than quinine, and it should not be used for long-term suppressive or prophylactic treatment of any form of malaria.

Administration: Orally.

Source: Abbott Laboratories, North Chicago, Ill.

PROCAINE PENICILLIN G IN OIL WITH ALUMINUM MONOSTEARATE

Description: Crystalline Procaine Penicillin G, suspended in peanut oil containing 2% of aluminum monostearate.

Form Supplied: 10-cc. multiple dose vials (300,000 units per cc.).

Action: Systemic anti-infective, designed for prolonging effective therapeutic blood level and for minimal pain upon injection.

Administration: Intramuscularly, as indicated. Persons suspected of being allergic to procaine should receive an intradermal procaine test prior to therapy.

Source: Parke, Davis & Co., Detroit 32, Mich.

PROCAINE PENICILLIN G IN OIL WITH ALUMINUM STEARATE

Description: The water-insoluble salt of penicillin G procaine in oil with 2% aluminum stearate as a suspending agent.

Form Supplied: 10-cc. multiple dose vials (300,000 units per cc.)

Action: Systemic anti-infective, designed for prolonging effective therapeutic blood level and for minimal pain upon injection.

Administration: Intramuscularly, as indicated. Patients suspected of being allergic to procaine should receive an intradermal procaine test prior to therapy.

Source: Schering Corp., Bloomfield, N. J.

TERSAVIN

Description: Tablets, each containing 30 mg. of the crystalline 1-ephedrine salt of penicillin G (equivalent to 30,000 units of penicillin G and 9.9 mg. of 1-ephedrine) with suitable buffering agents. When one tablet is dissolved in 7.5 cc. of distilled water, each cc. of the solution will contain approximately 4000 units of penicillin G and 1/8% of 1-ephedrine.

Form Supplied: In packages of 8 foil-wrapped tablets, together with a bottle graduated at 7.5 cc.

Action: Combined anti-infective and vasoconstrictor for the treatment of acute and chronic sinus infections.

Administration: Solution is applied to the infected sinuses by irrigation, installation or Proetz displacement technique.

Source: Hoffmann-La Roche, Inc., Nutley 10, N. J.

TRESANOIDS

Description: Rectal suppositories each containing tyrothricin, 1 mg.; phenylpropanolamine hydrochloride, 20 mg.; benzocaine, 15 mg.; bismuth subgallate, 150 mg.; zinc oxide, 150 mg. in a special water-soluble base.

Form Supplied: In boxes of 12.

Action: Anti-infective and local anesthetic.

Administration: Topically for proctological conditions.

Source: Sharp & Dohme, Philadelphia 1.

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It is now possible to give 250,000 units of crystalline penicillin G (potassium salt) in one coated, pleasant-tasting, buffered tablet, if you specify the Schenley product. Ample evidence supports the value of the oral administration of penicillin when given in sufficiently high dosage. Clinical reports show that even serious infections due to penicillin-sensitive organisms—such as acute respiratory illness,[1,2,3,4] impetigo,[4] gonorrhea,[5] and rheumatic fever (prophylaxis)[6]—can be treated effectively by this convenient, painless method of administration.

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REFERENCES:
1. J. Pediat. 32:1 (1948).
2. Am. J. M. Sc. 213:513 (1947).
3. J. Pediat. 32:119 (1948).
4. New England J. Med. 236:817 (1947).
5. New York State J. Med. 48:517 (1948).
6. Lancet 1:255 (1947).

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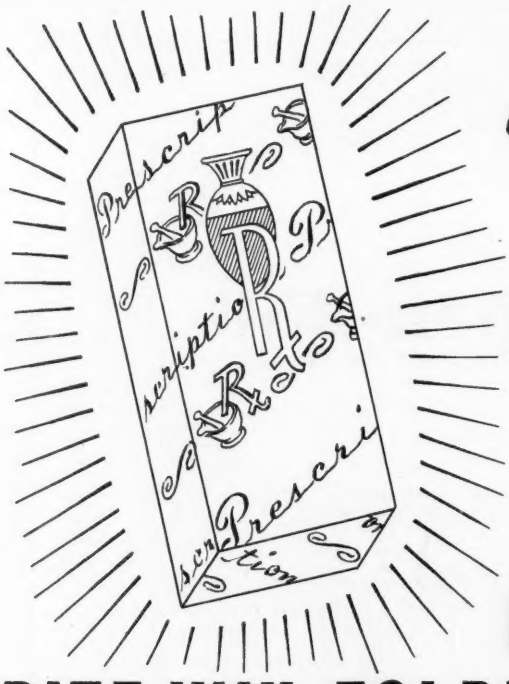

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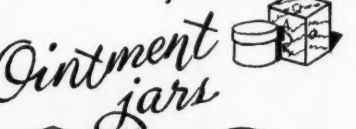

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Jacksonville Convention Plans

GROUNDWORK for the 1949 convention of the AMERICAN PHARMACEUTICAL ASSOCIATION to be held in Jacksonville, Fla., the week of April 24 was laid at a committee meeting held in Jacksonville on Oct. 29. Those attending the meeting included Mr. J. K. Attwood, general chairman and local secretary for the convention, members of the local convention committee, and state association officials. Dr. Robert P. Fischelis, secretary of the A. PH. A., was a guest of the committee. The group of pharmacists who will have much to do with the successful planning of the 1949 meeting is shown in the accompanying photograph taken at the home of Mr. Attwood. Standing, left to right, are: Robert Jackson, Jacksonville; Walter Griffen, Jacksonville, president of the Northeastern Florida Pharmaceutical Association; Don Evans, Orlando; L. W. Harrell, Gainesville; E. J. Mundy, Jacksonville; R. Q. Richards, Fort Meyers, secretary of both the Florida State Board of Pharmacy and the Florida Pharmaceutical Association; and C. G. Hamilton, Pompano Beach.

Seated, from the left are: J. K. Attwood, Jacksonville, general chairman of the local committee; Dr. Fischelis and Ed Pierce, Jacksonville, co-chairman of the convention committee.

N. E. Florida Association Sponsors

The meeting of the convention planning committee was held in conjunction with a meeting of the Northeastern Florida Pharmaceutical Association which will act as the host for the convention. The Northeastern Association is comprised, geographically, of sixteen counties in the Jacksonville region and the group, by resolution, has pledged its full cooperation and support to the committee in charge of arrangements.

Secretary Fischelis was the principal speaker at a meeting of the local Association held the evening of October 28 in the Seminole Hotel, Jacksonville. R. Q. Richards also addressed the meeting, reporting on the current activities of the two state groups he represents.

Convention plans for the scientific, professional and business sessions are well advanced and will be reported in THIS JOURNAL monthly. All hotel reservations will be made through the housing bureau of the convention and full details will be sent to each member by mail and published in the JOURNAL.

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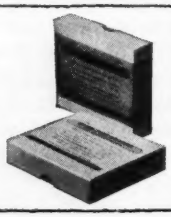

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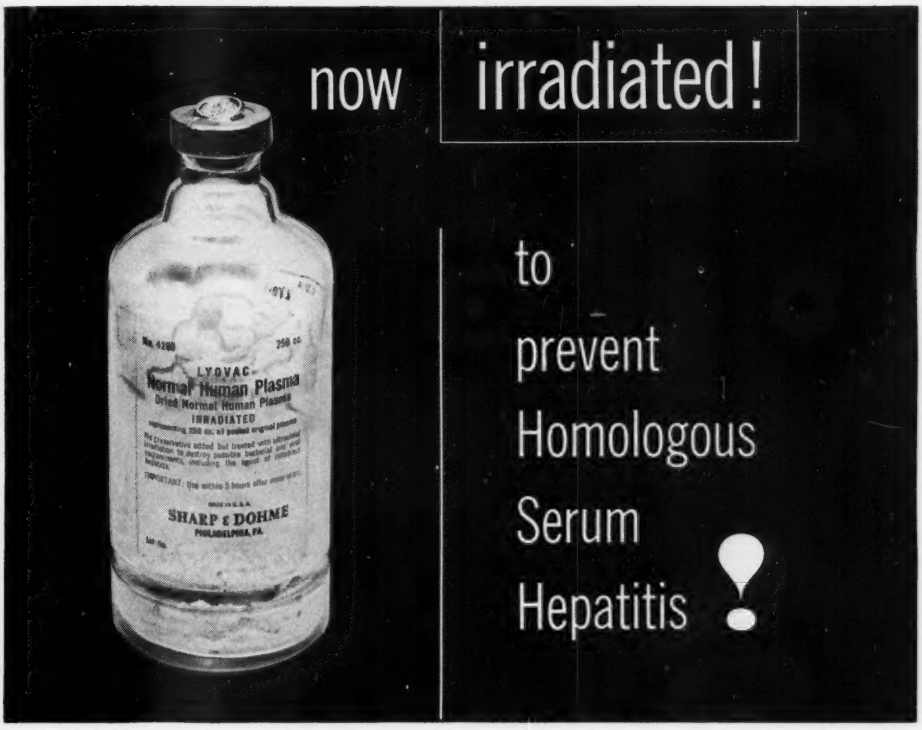

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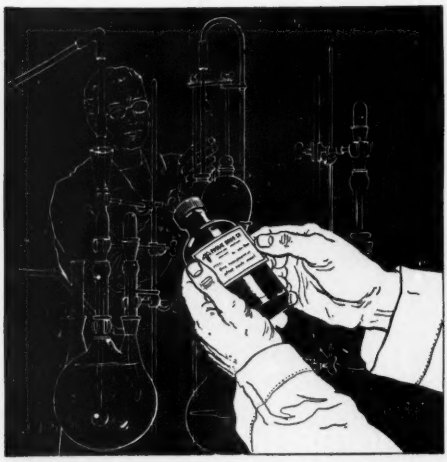

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